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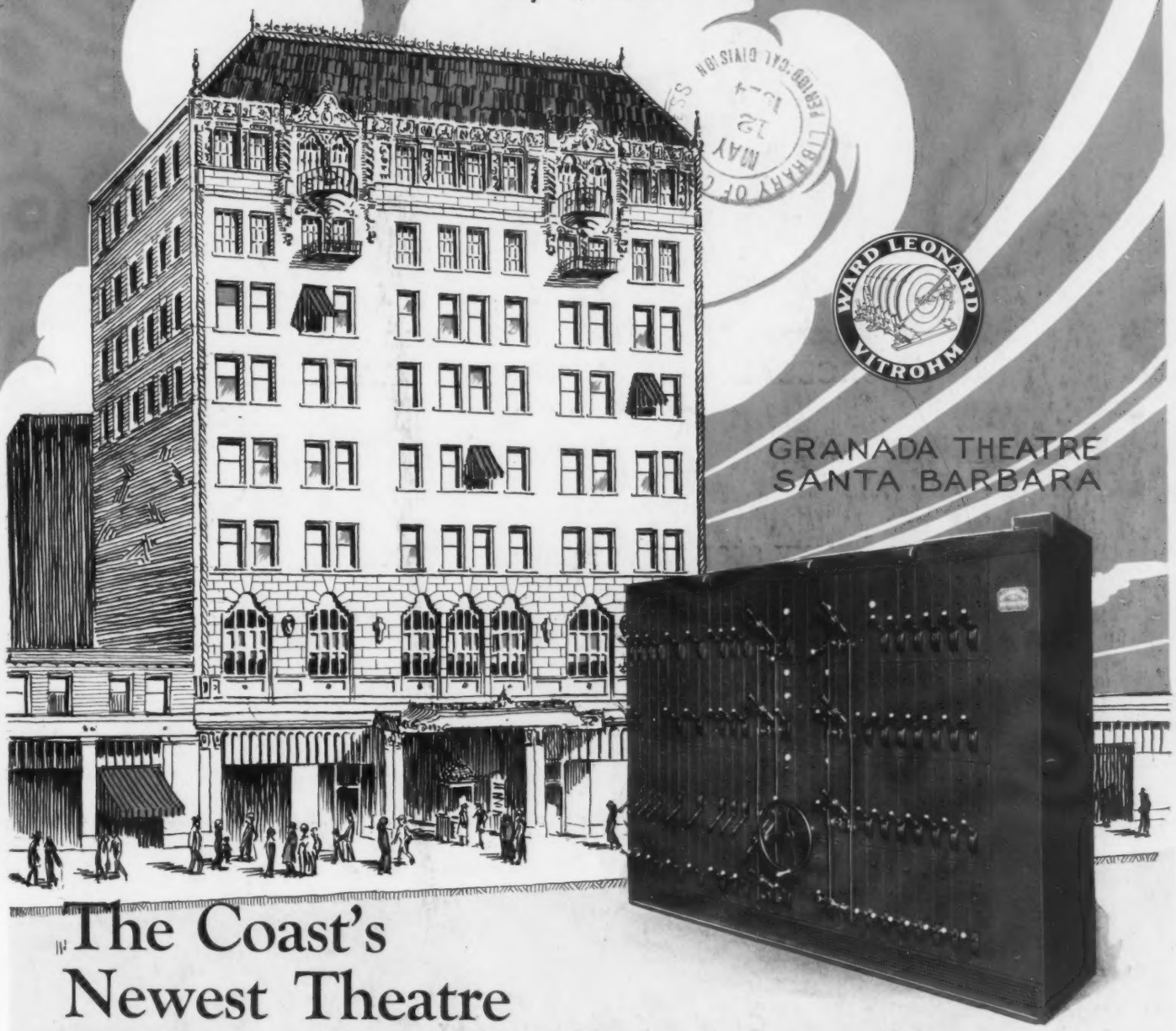

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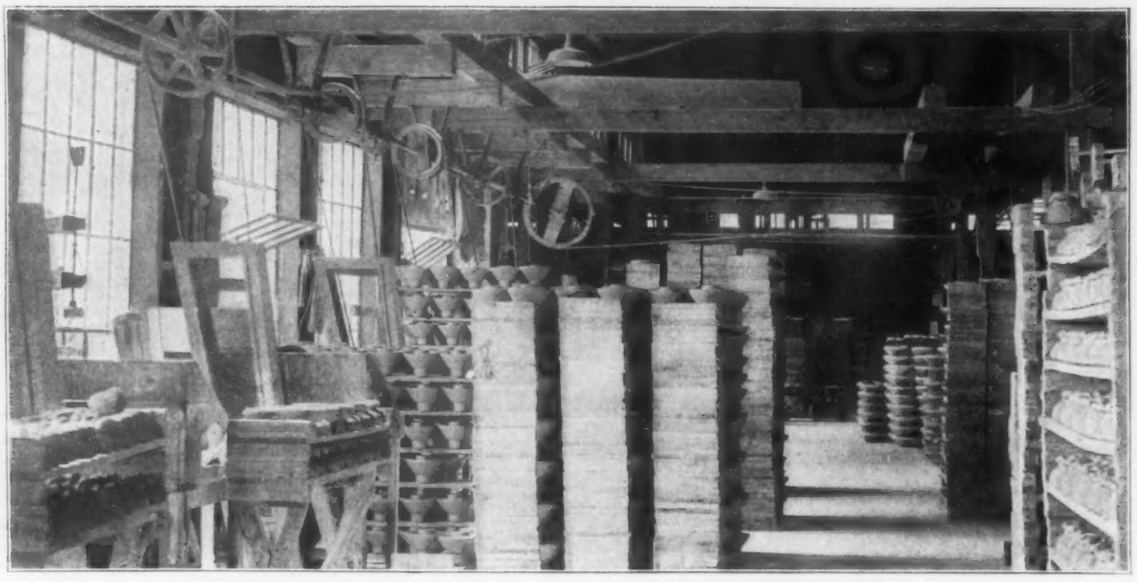

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The Convention Issue June 1

AS the time approaches for the annual convention of the Pacific Coast Electrical Association, our readers will be interested in learning of the plans of the Journal of Electricity for bringing the convention to them through the columns of this paper.

The time—June 16 to 20 next; the place—Hotel Coronado, near San Diego, California, and the publication—Journal of Electricity, in accordance with the usual custom.

There will be the pre-convention issue, June 1. In this number there will be published all of the formal convention papers, the reports of all the committees carrying the results of their study and investigation of every conceivable phase of the electrical industry, both technical and commercial, during the year just past.

Every member of the Association will receive his copy, as well as such readers of the Journal as are not members. Those who will attend the Convention are thus afforded an opportunity to study the reports and prepare their discussion for presentation at the section meetings. Those who desire to participate in the discussions, but who are unable to attend the Convention, may prepare their discussions and forward them to the Committee Chairmen who will present them by proxy.

Through this service, the voice of this assemblage will be heard throughout the entire eleven Western states. It is by far the most important event of the year, electrically, and, for the same reason, the June 1 issue of the Journal is perhaps of greater service value than any other. On this account, the selling section attracts more than ordinary interest for the reason that the story of the apparatus, appliances and supplies ties directly into the text of the Committee reports. In effect, the Committee reports tell what has been done, what results have been achieved, with the application of the apparatus, appliances and supplies set forth in the selling section.

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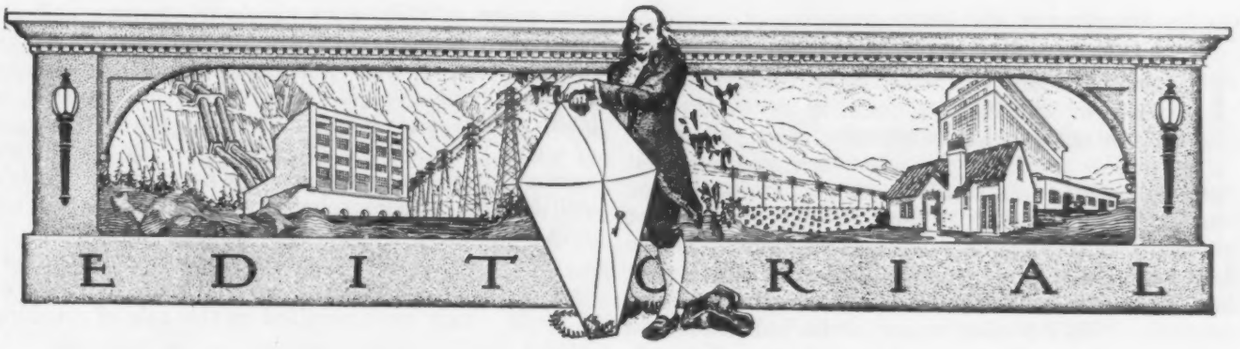


Again the California Water and Power Act

LORD NORTHCLIFFE once said that his long career as a publisher had taught him one cardinal principle—the power of repetition. The American advertising man has developed this same thought into a slogan of his own, namely, "Tell the public, and tell 'em again, and again, and then once again." It would seem that if the proposed California Water and Power Act is to be defeated for good and always, the electrical industry must gird up its loins and start a campaign of reiteration of the arguments used in 1922 against this vicious and destructive measure.

DEFEATED by the voters by the overwhelming majority of 353,849, the Act is with us again,—same model, same paint, same horsepower, same salesmen. Until it becomes so monotonous as to attain the status of a Bryan presidential campaign, the concerted efforts of the electrical industry must be directed toward giving the public the facts.

AS a gentle reminder to those who have forgotten the intensity of the campaign of 1922, we publish on another page of this issue a review of the 1924 Act together with a critical analysis of its destructive character. Here is a measure purporting to be for the benefit of the people, which, if passed, would set up a fund of $500,000,000 offering vast opportunities for improper manipulation. A business which already represents an investment of close to a billion dollars would be made subject to the whims and caprices of political control. A board of five administrators, politically appointed, changing with each administration, subject to no supervision save the vagaries of the recall, would have unrestricted license in spending the taxpayers' money as they saw fit. Pages could be filled pointing out many more such obvious weaknesses as those stated above.

TODAY, in California and in every other state of the Union, the water and power business is being efficiently managed by private enterprise subject to sound public regulation. The government can regulate industry but it must not enter into the field as a competitor of citizens or as an unrestricted and unregulated monopoly.

THE proponents of the Water and Power Act do not admit defeat. Despite the will of the people as voiced in the last election, they are again in the field with colors flying. On account of their previous reverse, they will redouble their efforts this year. Is the electrical industry to sit back and rest on the laurels of its last victory? Forewarned is forearmed and an attacking army is three times victorious. Let us start building our trenches today.

In the Kingdom of the Blind A One-Eyed Man Is King

IT is not difficult, in fact it is entirely too easy, to write or enunciate a quantity of words, and say little or nothing. It is almost a stroke of genius to say a few words so pregnant with meaning that they capture the imagination and leave an impression that lasts a lifetime. "Millions for defense, and not one cent for tribute," electrified the American people and swayed Congress from indecision to action that had a profound influence upon the history of this country. "This Nation cannot exist half-slave and half-free," in a few words expressed more than volumes during the crisis of the Civil War. "Self-determination" stirred all the peoples of Europe, even though it has failed of realization.

Now, at the beginning of the second campaign for the defense of private initiative and ownership of public utilities under state regulation in California, comes Frank G. Tyrrell of Los Angeles with his article in this issue on "The Los Angeles Experiment in Municipal Power." He has given to the people of California a phrase that characterizes the whole glittering dream of state ownership, operation and control, as "The passionate pursuit of the second-best."

Why second-best? The school teacher conducting his class in economics a few years hence, will say, "Children, let me tell you of South Dakota, of the government operation of railroads during the Great War, of the Province of Ontario, yes, and of the City of Los Angeles." South Dakota has abandoned its passionate pursuit of the second-best, after a failure that almost reached the proportions of a disaster. The result of the government experiment in the second-best is too recent an event in history to require comment. An investigation by a whitewashing committee of the affairs of the Ontario Hydro-electric Power Commission disclosed the fact that the whitewash was not thick enough to cover the truth that here again is further proof that no more than a rather poor second-best was the most that could be said for it. Mr. Tyrrell himself presents facts and figures that should be a lesson to all of us, a story of specious claims of profits that have not been realized, of raid after raid upon the pockets of the taxpayers, demands for more and more millions in the shape of bonds, and further and further claims of great things to be accomplished—manana.

It is truly a case of the blind leading the blind, in the passionate pursuit of the second-best.

Put the Wife on the Payroll

LIVES there a woman with soul so dead that she would not like to see her husband increase his monthly income by $200, or who would not like to see him make a greater success in the business in which he has elected to gain a livelihood? And is there a business which affords a wife or a daughter a greater opportunity to help a husband or a father than the electrical business? Yet how many wives of men in the electrical industry know anything about the work which their husbands are doing? How many of them cook on electric ranges and are sufficiently familiar with the advantages of electric cookery to urge their friends to try it? How many of them have ever discussed the conveniences of labor-saving electric appliances with fellow members of a club? How many of them know the arguments against state or municipal ownership of electric utilities and can comprehensively discuss this subject with friends?

We know of the wife of an electrical contractor-dealer who has furnished her husband with scores of leads which have resulted in the sale of washing machines and vacuum cleaners. He contends that she is the best salesman his business has. We also have heard of the wife of a central station commercial man who has induced several of her friends to purchase electric ranges. Further than that we know of the wife of a central station executive who talked to hundreds of club women against the California Water and Power Act in 1922 and the daughter of another who has sold many shares of stock in her father's company to her friends. These women are the exceptions. Yet they show what can be done.

Convention time is approaching. Many of the men who attend conventions this summer will bring their wives. Elaborate plans are made to entertain the ladies while the husbands are attending the convention sessions. They are putting on contests and teas, automobile rides and bridge parties, luncheons and theater parties. Would it not be possible to get the women together at a luncheon meeting and tell them something of the romance and the possibilities of the electrical business? Surely among the electrical fraternity there are men with sufficient knowledge of the electrical business to give these women a worthwhile and yet entertaining message. Here is an opportunity that has been overlooked in the past. It is well worth cultivating.

Not Even Politicians Can Give Something for Nothing

PROPONENTS of municipal ownership in Washington have filed with the secretary of state an initiative measure known as the Bone bill giving municipalities engaged in the power business the right to distribute and sell electric energy outside their corporate limits. The bill provides further that income derived from such sale shall be tax free and that cities shall have the right to condemn the property and lines of private companies as they see fit. While not as vicious as the Erickson measure, which has been abandoned for the time being, the Bone bill is the entering wedge for ultimate state ownership.

An attempt is being made to have the measure labeled the "Bone Free Power Bill." Here is a subtle politico-psychologic move designed to instill in some portion of the public mind the belief that the people will get something for nothing. The propagandists would have the unthinking believe that a city, a district or the state as a whole can go into the power business, develop projects, distribute energy and drive out private competition, all without a penny of cost to the public. Everything, including the original expenditure, is to come out of "profits."

The voters in Washington are not likely to be deluded by such misleading arguments. Seattle's experience in the power business ought to furnish some measure of refutation to the theory that the only thing necessary for success is faith, hope and the ability to borrow money and pay interest by increasing taxes. Seattle citizens are not only paying the highest taxes of any city on the Pacific Coast, but they are paying high fares for riding on the municipally operated street railways and are getting better electric service from a privately owned company at the same rate that the city is charging.

The Bone bill may get some support but not because anyone has been deceived by calling it a "free power" bill. The people of Washington, and especially those residing in Seattle, know better.

Gardens at Utility Properties Win National Commendation

IN an article discussing the activities of the National Garden Association which is attempting to secure a better grade of gardening throughout the country, the Garden Magazine for March made the following statement:

"The Pacific Power & Light Company offered prizes for the best improvements in the company's grounds at each of its 60 different stations in Oregon, Washington and Idaho. The results demonstrated clearly that public utility grounds can be made beautiful and attractive—a hint of value to every large manufacturing company."

To those who are familiar with the properties of this company the above statement has particular significance. To those who are not we promise a treat if they are ever afforded an opportunity to visit the properties. Substations have green lawns, flowers, trees, shrubs and vines all artistically arranged, hydro plants have parked grounds and gas plants are as clean and as immaculate as it is possible to make them. Employees who have done the work in their spare time have developed a keen sense of pride in their company and its properties. Citizens of the community in which the stations are situated point out the properties to visitors as if they were city parks. They are proud of the company which furnishes them electric or gas service.

The plan followed by the Pacific Power & Light Company is highly commendable and worthy of emulation by other public utilities.

Electric Trucks as a Traffic Aid

ELECTRICITY is afforded an unusual opportunity by the traffic situation in our larger cities, where the congestion is rapidly approaching the point where only those vehicles that are positive in operation will be permitted on the streets. Horses must disappear and motor vehicles subject to the vagaries of inexperienced or careless handling will be in great disfavor with the authorities. Electric trucks, with their ease of control and their positive operation, together with their rapid acceleration, offer a solution, in part at least, of the traffic problem and should serve to reduce traffic congestion. The delay incident to stalled motors and to the intricacies of gasoline motor control in the hands of those who are unfamiliar with their technicalities will be overcome by the extensive use of electric trucks and the loss of public time will be minimized.

Heads of large transportation companies have been convinced already of the desirability of electric truck transportation. One company now owns and operates a fleet of 1,550 electric vehicles. The police departments of cities look with favor on the electric vehicle as a help in the solution of the traffic problem. Economically, it has been proved that transportation costs have been lowered by the use of electric trucks.

Baling Wire Methods in Rural Electrical Installations

THE statement is made and quite truthfully, that the Western farmer is a "Jack-of-all-trades." He must be if he is to be successful in a venture in which he is pitted against nature and the elements. The remark is made that a farmer can take a piece of baling wire and repair anything from a tractor to a broken fence. Of late it would seem that the farmer is applying baling wire methods to the installation and use of electrical equipment and appliances.

Not subject to supervision or standards, ignorant of the procedure necessary for safety and likely to be guided by cost rather than quality in his choice of materials and equipment, he is creating a potential hazard out of an agency designed to be his greatest ally. Properly applied, electricity will prove one of his greatest boons. Misapplied, it is a hazard to both life and property. It is safe to say that in the majority of installations made by the farmer himself, baling wire methods are followed, and a potential hazard created which at any time may become real with subsequent loss and damage.

On another page of this issue Claude W. Mitchell of the Board of Fire Underwriters of the Pacific outlines the need for electrical inspection in rural districts. Mr. Mitchell points out that in cities and towns inspection exists, but that outside the corporate limits of municipalities there is no agency for determining whether or not an electrical installation is safe.

It would seem that here is an opportunity for the electrical industry in cooperation with the insurance people to bring about the much needed protection. Agitation can be started for legislation definitely assigning the duty of properly inspecting rural electrical installations to state or county authorities. Especially is this needed in the Western states where electricity is so universally used on the farms.

Further than this, the central stations, with which the farmer must necessarily come in contact in securing service, should impress upon him the necessity of having the installation made by someone thoroughly competent to see that the requirements of the National Electrical Code are carried out, preferably by a legitimate electrical contractor.

CURRENT COMMENT

Constant reference is made to various municipally operated street railway systems by the advocates of municipal ownership of the light and power business.

Municipally Owned Street Railway Lines

Particularly do they point with pride to the record made by Detroit with its railways. The Los Angeles Times, in a recent editorial, makes some interesting comparisons between the Detroit city-owned system and the privately owned and operated system in the southern California city. Excerpts from the editorial follow:

Los Angeles and Detroit have about the same street railway mileage. In Los Angeles the lines are owned and operated by a private corporation; the Detroit lines are municipally owned and operated. Griffith C. Ellis, president of the Detroit Municipal Railway Commission, gave some interesting data to The Times on Sunday relating to the operation of the municipal lines in Detroit. These figures enable one to make a comparison of the street railway service in the two municipalities.

MISGUIDED PUBLIC SERVICE ADVOCATE
PUBLIC OWNERSHIP PROPAGANDA
PUBLIC OWNERSHIP BLOCK
GOLDEN EGGS OF 100% PUBLIC SERVICE EFFICIENCY
PRIVATELY DEVELOPED HYDRO-ELECTRIC ENTERPRISE

Bronstrup in S. F. Chronicle.

WOULD SLAYING THE BIRD INCREASE ITS EFFICIENCY?

Detroit carried more passengers to the car mile last year than Los Angeles, moving 471,000,000 passengers against 341,200,000 for this city; put nothing aside for depreciation, while the Los Angeles Railway Company was compelled by the State Railroad Commission to put aside $1,061,000; and yet Detroit was compelled to charge a 6-cent fare, while the Los Angeles lines operated under a 5-cent fare.

Yet the Detroit street railways are said to be operated more economically and efficiently than any other municipal system in the United States. Prior to 1921 the Detroit lines were owned and operated by a private company, and a 5-cent fare was charged. The city bonded itself to take over the lines, the people expecting that the promises of the municipal-ownership propagandists of cheaper fare and a profit would be kept.

But the people were soon compelled to bond themselves for another $10,000,000 for expansions and improvements. Then came a clamor for higher wages for the employees, for the railway was now unavoidably involved in city politics. These things, according to President Ellis, "have compelled us to raise fares from 5 cents to 6 cents, with strips selling at twelve for 50 cents, which brings the average down to about 5.55 cents."

We are far from the days when Tom Johnson of Cleveland was proclaiming that, under municipal ownership, street-car lines could be operated at a profit at 3-cent fares.

It would be unfair to say that municipal operation in Detroit has proved a failure. The people are doing their best to make it a success. Mr. Ellis says "Our chief engineer, Mr. Mayo, is getting no salary. His predecessor received $15,000 and we expect, when Mr. Mayo is relieved of the emergency duty he is now performing, to pay his successor on a scale commensurate with what his abilities would command elsewhere. We ourselves get no pay. That, too, is a condition that cannot continue."

The Detroit street railways pay for paving between the tracks, as the railways do here. Equally important, they pay the same taxes that a private company would pay, except they pay no federal income tax. Men of means and recognized merit have volunteered their services in order to give municipal ownership a fair test. But they could not avoid the inevitable increase in the cost of service and a consequent increase in fares.

San Francisco claims to operate its street railways at a profit. But the annual report of that system is the joke of statisticians wherever it is known. The municipal system does no street paving and it pays no taxes. The Los Angeles Railway Company paid last year $830,000 in state and federal taxes.

Why is the cost of operation higher in Detroit under municipal ownership than in Los Angeles under private ownership? Here is just one item in the cost of operation in Detroit: "For injuries and damages, $685,000." It is plain that there was either extremely reckless operation or those who alleged injuries were able to secure highly favorable settlements.

Municipal-ownership propagandists will say that the people of Detroit paid no dividends to the owners of the street railways last year because the lines belonged to the people. But the people of Los Angeles paid no dividends to the owners of the Los Angeles Railway last year. This company has not declared a single dividend, has not paid a dollar to its stockholders in the way of profits since 1914.

Moreover, the Los Angeles Railway gave free transfers to 30 per cent of its passengers last year, while in Detroit transfers cost 1 cent each; it carried 2,811,000 school children

for 2½-cent fares, and its free list, regulated by municipal ordinances and franchise regulations, climbed up to 7,700,000. Apparently our policemen, firemen and mail carriers did considerable joy riding on the street railways last year.

Detroit has what a majority of its citizens desired, a municipally owned street-railway line. But it has also what they did not desire, but could not evade, an increase in fares from 5 to 6 cents and a bonded debt for many millions.

A New Bill for Government Ownership

Certain groups of politicians and demagogues seem bent upon launching the nation into the power business despite the costly experiments with government in business already written into history. A group of Middle Western senators, who should know better in view of the disastrous ventures in their own states, have proposed a bill to Congress calling for the creation of a federal public service commission to develop the water power resources of the country. In commenting on this measure, the Seattle Post-Intelligencer says:

One of the most desirable pieces of legislation now claiming the attention of the country is the proposed bill of Senator Norris of Nebraska, providing for a federal public service commission to develop the water power resources of the country and sell electricity to the people AT COST.

The bill already has strong support. It was prepared cooperatively by Senators Norris, Dill, Frazier, Howell and La Follette, and Congressmen Keller, Swing, Wefald, and others.

The measure is based upon the truth that real conservation does not consist in merely withdrawing from use the people's resources, like coal, and oil, and water power. The people have the right to **intelligent use** of these resources. Senator Norris proposes to use the water powers intelligently.

If resources are simply withdrawn from use and locked away, as Roosevelt withdrew the oil lands of the West, there comes a revulsion of popular feeling, and we have such a crime as the general leasing act of Feb. 25, 1920, under which John Barton Payne and Albert B. Fall indulged in an orgy of giving away to private interests the nation's oil lands, too long withheld from use.

Senator Norris proposes that the water powers shall be put to work, not given away to private interests for nothing, but developed into electricity sold to the people without profit.

Senator Norris and his level-headed associates in Washington have been watching the work of the hydroelectric commission up in the Province of Ontario, popularly called "Hydro." Hydro takes the water power of Niagara Falls, turns it into electricity, and distributes it to municipal electric lighting plants through Ontario so cheaply that they sell to consumers at one-third the prices collected by corporations from New York and other American customers for current created by these same Niagara Falls.

Well, the Norris bill gives the federal public service commission a revolving fund of five hundred million dollars. This will construct plants worth many times five hundred million dollars. Users of the commission's electric current will pay a sum not only sufficient to cover the commission's operating cost, but also to repay the commission's treasury for its outlay on plants and transmission lines. These repaid funds will then be available for further water power developments.

Under the bill the commission is to be given Muscle Shoals for development, and also is to construct the Boulder Dam in the Canyon of the Colorado, designed to protect from flood the people of the Imperial Valley and supply six million horsepower for use of the people in Western states.

Any city, state or county can ask this federal public service commission to construct for it a water power development and sell the current AT COST. If the bill is passed, as it should be, we people can turn to the federal government to develop the water powers of the nation.

A more sensible view of the situation is taken by the Nogales (Ariz.) Herald, which roundly criticizes the Public Ownership League of America for advocating a similar proposal. This paper says:

The Public Ownership League of America is working for the adoption of a National Public Superpower bill. These words are large sounding and can cover a multitude of political sins.

There is nothing mysterious or super-natural about a superpower system. It is just plain everyday electric power, either developed in large plants and transmitted over long distances by wire, or it is the connecting up of individual small plants so as to enable the transmission of power for an almost endless distance.

The term "superpower" will give public ownership advocates and those desirous of establishing socialism pure and simple a handle on which to fit many of their pet schemes in attempting to secure public support. A superpower program under public ownership would involve the taxpayer in greater expenditures.

Rather than municipal, state or government ownership, The Manufacturer (Salem, Ore.) believes that the customer ownership policy of the present utilities affords a solution for the ailments which the propagandists ascribe to the electric light and power companies. In a recent editorial, this paper says:

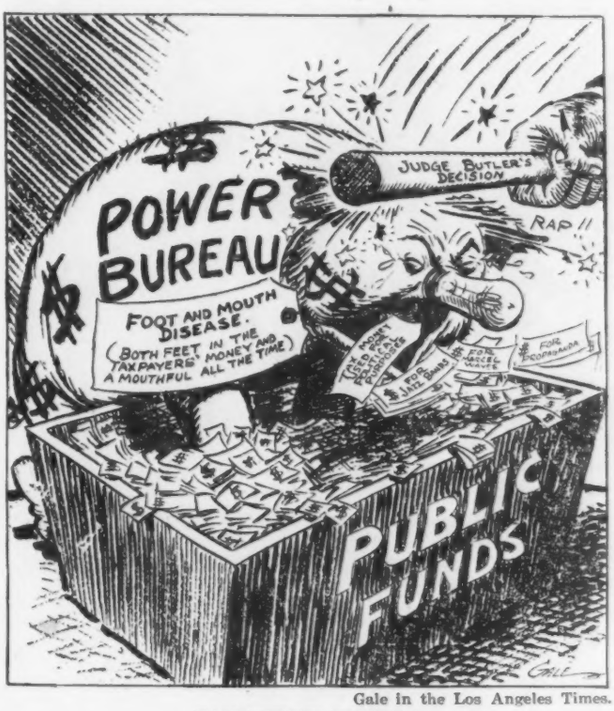
The people have a deep interest in well managed public utilities, because hundreds of thousands of consumers of light, heat, telephone, water and other forms of public service are stockholders in these utilities.

Public ownership or what may be termed political management of such properties has not proven a universal success, and thousands of mismanaged and unprofitable publicly-owned utility properties have gone back to private ownership.

Movements in states are precipitated from time to time for state-wide ownership of light and power plants, water powers and even telephone service, and even abolition of public service commissions, in the struggles for political leaders to get payroll domination.

With hundreds of thousands of utility employees under their control city politicians seek political power to get control of state governments and even power over the national congress. This is the real secret of attempted public ownership of interurban and steam railroads.

State and national regulation of public utilities is now amply provided and is giving fair satisfaction to stockholders, extending into millions of laborers and consumers, and there is no excuse for extending the grasp of state or city politicians to larger fields.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RAP!!
FOOT AND MOUTH DISEASE.
(BOTH FEET IN THE TAXPAYERS' MONEY AND A MOUTHFUL ALL THE TIME)
PUBLIC FUNDS

Gale in the Los Angeles Times.

CAN HE BE CURED?

THE Great Western Power Company has recently added a 32,000-hp. unit to its Caribou plant on the North Fork of the Feather River, increasing the capacity of the station to 96,000 hp. Installed at a cost of approximately $1,000,000, the new unit is the first of a series of developments to be completed in 1924.

The Los Angeles Experiment in Municipal Power

By Frank G. Tyrrell*
Attorney-at-Law, Los Angeles, Calif.

IN 1910 the City of Los Angeles embarked in the electric power business as a side line to the municipal water supply. To date it has spent $23,000,000 for power development and is now seeking an additional $21,000,000. Can the expenditures be justified? Have the people benefited? These are some of the questions Mr. Tyrrell answers in his discussion of a business which he characterizes as "the passionate pursuit of the second best."

IN the early nineteen hundreds Los Angeles went to the Owens River valley in Inyo County, Calif., for water. Dams and other structures were built at the head of the river and the water was brought by aqueduct over desert and mountain 240 miles to Los Angeles. Forty miles from Los Angeles where the water dropped down the mountains toward the coast, engineers advised that electric generators be set up and the falling water turned into power. Advocates of municipal ownership seized upon the situation to urge that the city enter the power business. And without any preliminary study of the subject, without analyzing the experience of other cities in similar projects, the city was rushed into a bond issue of three and a half million dollars.

The three and a half millions were to build a power plant and a transmission line into Los Angeles. How the power was to be disposed of was not clear. Engineers advised sale to private companies; others talked of distribution by the city itself. Probably the general belief, at least at first, was that the city would sell the power wholesale.

Some of the Promises

The proponents of municipal power were clear and emphatic in their promises of financial advantage to Los Angeles.

The Public Service Commission said (L. A. Examiner, April 11, 1910):

> "We may never require another bond issue, for this one may lay an earning foundation that will itself pay for the rest of our future improvements. This great project will be completed without the expenditure of another cent, other than that voted for the work by the bond issue."

Chief Electrical Engineer Scattergood promised "a good net profit, guaranteeing against any possible taxation for aqueduct or power bonds from the beginning of operation." (L. A. Record, April 16, 1910.) One eager champion, the mayor himself, declared the proposition a "money-earner," the bond issue no burden at all, and intimated that it would not only pay for itself, but "wipe out the entire city indebtedness!" (L. A. Express, April 16, 1910.)

These promises carried the bond issue. It was a phenomenal example of "frenzied finance." The city was to invest three and a half millions in a power plant and make it pay for itself, reduce taxes, and wipe out the entire city indebtedness. A truly Napoleonic feat!

What followed? The power plant and the transmission lines were not completed. Taxes were increased in 1911 to pay interest and sinking fund charges on the bonds, and in 1914, the people were called upon to vote more bonds,—this time six and one-half millions. The cry was "the aqueduct power must be saved for the people." To do this, the city must go into the electric business "on a big scale." It must build a distribution system, wires and lines reaching all parts of the city.

The alluring promises and prophecies of 1910 were repeated. A deputy city auditor said:

> "The earnings from the power plant will take care of all interest charges and make nearly a million dollars a year profit besides, and the tax rate will not be increased by the power bonds." (L. A. Record, April 29, 1914.)

An "Irish Dividend"

Again the people believed and the bonds were voted. One power plant and a transmission line were completed and a distribution system partly built. The city went into competition with the existing companies, the Southern California Edison Company and the Los Angeles Gas & Electric Corporation. And with what net result? Lighting rates were reduced a trifle, one-half cent a kilowatt-hour, but bond interest was not paid, nor was money provided for a sinking fund to pay off the bonds as they came due. On the contrary, taxes were still further increased to meet interest and sinking fund,—another "Irish dividend" for the patient taxpayer.

Before the proceeds of this second issue of six and one-half millions were fully spent, the sponsors of this municipal adventure came forward with splendid audacity, proposing still another bond issue, to provide for future growth and to buy out the two private companies. The Edison Company brought power from the mountains of Fresno and Kings Counties; the Los Angeles Gas & Electric Corpora-

*An address delivered before the San Francisco Electrical Development League, April 7, 1924.

tion generated power by steam in the City of Los Angeles. The Edison company's distribution system covered almost the entire city; the other company's a considerable part of it. The people were told that purchase of the competing companies would bring consolidation and efficiencies that would insure the revenue and the profits promised before but not realized. The lighting rate was to be further cut and taxes were to be reduced. Above all, interest was to be paid on all bonds and the bonds themselves were to be paid off as they came due.

Getting Deeper into the Hole

Twelve millions were asked for, almost twice as much as the second bond issue and nearly four times as much as the first. By this time there were some unbelievers and the bonds did not carry. They were put up again, this time for thirteen and a half millions and in 1919 the people voted them, as much to protect their previous investment as for any other reason. This made the city's bond issues for power, nine years after the project started, twenty-three and a half million dollars.

Then of course came litigation with the private companies. At first both companies resisted, but the Edison finding that it had a wide market outside the city limits and that it could make a favorable wholesale contract with the city, capitulated and sold out. The city took possession in 1922. The Los Angeles Gas & Electric Corporation kept on fighting and now, five years later, is still in full possession of its properties and hotly competing with the city for both light and power. It has about one-third of the business. Condemnation proceedings against the Los Angeles company have not yet even a good start and probably could not be completed in another five years if the city had money ready to buy it out,—which it has not.

And here let me remind you that the thirteen and a half millions was to give Los Angeles the last word in a united, comprehensive distribution system. It was eventually to free Los Angeles of the private companies. It was to make earnings that would pay interest on the bonds, all of them; earnings that would pay the bonds themselves as they came due. It was to reduce rates and make profits for the taxpayer.

These promises of 1919, like those that went before them, have not been kept. One of the private companies is still unpurchased. Taxes have not been reduced. Rates have been raised rather than reduced and are higher today than before Los Angeles went into the power business.

Thirty-five Millions—a Mere Trifle

Last year a fourth bond issue, greater in amount than all the others combined, was placed before the people. It was for thirty-five million dollars, ten times the amount of the first issue.

Again there were generous promises, but the people were skeptical, although a new color of romance was invoked, that of bringing water and power from the untamed Colorado River, water for millions, and power for a great industrial commonwealth. This time the people did not accept the promises. When the votes were counted the verdict was "NO." The people had decided not to add thirty-five millions to the twenty-three and a half millions already voted.

But the persistent proponents of public ownership are not discouraged. They are back again with a request for more bonds. At first, early this year, they asked for thirty millions, twenty-four millions for extensions and additions and six for a steam generating station. Then came the Chamber of Commerce and suggested that they be content with twenty-one millions. They have accepted the suggestion and have cut out the six millions for a steam plant and dropped three millions from the amount first asked for extensions and additions. The twenty-one millions are to be spent at the rate of seven million a year for the next three years.

More Promises and More Bonds

Thus far there has been no promise of reduced rates, but the same old promises of profits are there, savings to be made by stopping the wholesale purchase of power from the Edison company, savings to be made by greater efficiencies in operation, increased earnings for bond interest and for paying off the bonds themselves. Again there is the plea to make good on the investment; to arm the Power Bureau to "carry on" as befits the growth of Los Angeles.

How will this bond issue come out? I hesitate to answer. Early in April the Board of Supervisors has had the temerity to propose for county flood control thirty-five millions to be voted on at the same election, May 6, 1924. This in spite of objections by the Power Bureau who see their plans thereby further jeopardized. Nor is this all. The streets of Los Angeles are full of circulars from a "Citizens' Bond Committee," which say:

> "Bond issues to the amount of $102,840,000 are to be voted upon at elections in May and June.
>
> "This avalanche of bonds threatens to wipe out the bonding credit of Los Angeles. Already the limit has been passed for non-revenue producing bonds and there is a scant margin left for revenue-producing bonds.
>
> "The only way to provide new credit is to increase the assessed valuation of taxable property—and that increases taxes.
>
> "The bonded debt of the City of Los Angeles is now $103,364,837.50."

Is It Throwing Good Money After Bad?

Note how these bond issues came along: first a small one of three and a half millions, then six and a half millions; then thirteen and a half millions, then thirty-five millions; and that failing, one of thirty now reduced to twenty-one millions. As in most public ownership schemes, it has been a case of first getting the people in part way, getting their toe in the door and then pulling them wholly through. I doubt if there are a thousand voters in Los Angeles who would have voted for the first issue if they could have foreseen what was to come after. They went into the power business in the belief and on the promise that three and a half million was the beginning and the end of their invest-

ment and necessary only to enable the city to use the aqueduct and its waters to the best advantage. Now they are in for twenty-three millions and may get in for twenty-one more, forty-four millions in all.

And here let me say that the purchase, generation and sale of power and light has become a big business in Los Angeles. Hundreds of men and women are employed at it. The department which handles it is one of the largest in the city government. It is called the Bureau of Power and Light. It has managers, engineers, superintendents, agents and attorneys. Many of them are enthusiasts, followers of fads and experiments, who like to speak of themselves as men and women dedicated to public service. Opposition to them or to their dreams or experiments is taken as opposition to the people. It is a defiance, if you please, of the **people's** will.

But when they go out to talk about the Bureau and its experiences they tread softly. There are many things they do not tell.

The Bureau and the Aqueduct

They do not tell you that the Power Bureau pays nothing for water stored in costly reservoirs and delivered through two hundred miles of aqueduct to its power plants forty miles from Los Angeles.

They do not tell you that the Bureau takes this water almost within sight of the city, as if it were taking a mountain stream that nature had put there. To the Bureau it is as if God had put a water-fall forty miles from Los Angeles.

Yet that water had to be collected and stored in the mountains and brought two hundred miles through ditch and tunnel to the Power Bureau's diversion works. Often it happens that more than one-half the water is used wholly for power. Much of it, turned out for power purposes, is never brought back into the aqueduct and never reaches Los Angeles. It is not even sold for irrigation but is allowed to flow on to the ocean.

The aqueduct cost roughly twenty-four and a half million dollars. Under ordinary business management the Power Bureau should pay half the cost of operation and half the annual depreciation to the point where the water is diverted for power. Likewise it should pay half the interest on the investment and half the bonds as they fall due.

Would anything less be asked of a private company? The question answers itself. If the Edison Company, for example, had built a power house where the Power Bureau did, it would have had to pay for the water what it cost to bring it there. No one would assume in dealing with a private company that the water at the point of diversion was nature's product to be harnessed without charge.

How to Make the Water Department Pay

Figures have been published in Los Angeles which show that the Power Bureau should pay from a million to a million and a half dollars a year for its share of the aqueduct. The figures for the fiscal year ending June 30, 1923, have been given as $300,000 for operation and depreciation and $1,000,000 for interest and principal on the bonds, a total of $1,300,000.

I believe it is generally admitted that the water project by itself does not pay. It does not take in money enough or charge rates high enough to pay its full interest and sinking fund charges. In the fiscal year ending June 30, 1923, it fell short $1,100,000 in taking care of the interest and sinking fund due on its bonds. This was necessarily taken out of taxes.

At the same time the Power Bureau escaped paying $1,300,000 for its share of the acqueduct. Had it paid this sum the Water Department would not have been required to take $1,100,000 out of taxes. Rather it would have been left with a clear credit of $200,000.

Meeting Bond Interest and Principal

Our friends of the Power Bureau do not tell you that for many years they did not set aside anything out of earnings to retire bonds as they fell due. Yet the law of the state directs that municipal bonds be paid off at a given proportion per year. At the end of the fiscal year there were outstanding and unpaid $21,300,000, on which a proper yearly allowance for retirement would have been $532,500. These figures have been published several times in Los Angeles, recently by the Business Property Owners' and Managers' Association.

They do not advertise the fact that the Power Bureau pays no taxes. Private companies pay to our state 7½ per cent of their gross revenue. They pay in national and local taxes an additional 2½ per cent, 10 per cent in all. According to its own figures the Power Bureau made gross earnings for the year ending June 30, 1923, of $7,762,606, 10 per cent of which is the tidy sum of $776,260. This amount the Bureau did not pay out. The state and nation did not wipe that amount off. They did not go without that money; they did not cut expenses to meet this loss. They necessarily took it out of the rest of the people.

A One Per Cent Profit

Ignoring these items, the Power Bureau claims a profit of $2,693,623 for the fiscal year. If it was charged these items (viz: $1,100,000 for use of the aqueduct, $532,500 to pay off its bonds as they fell due and $776,260 for taxes), there would be a balance of only $284,863. This is, as the Los Angeles Times has said, less than one per cent on the investment which the Bureau by its own books fixes at $35,340,448.

Neither do they tell you that for years the Power Bureau made no serious effort to pay interest on its bonds at all, or to pay such of its bonds as fell due. They left that to the glowing future,—and the taxpayers.

In the years from 1910-11 to June 30, 1923, the taxpayers paid for this account about $6,500,000, which is today a debt owing the taxpayers. It should be said for the Power Bureau, however, that it made no charge against taxes for the fiscal year ending June 30, 1923, and has so far made no such charge for this fiscal year.

This statement as to the six and a half millions paid out of taxes is not a random statement. The

audit of Price, Waterhouse & Company shows it. The Power Bureau admits it, but prefers not to talk about it. Really, they ignore it, and in its place claim a surplus of $6,423,203 at the end of the last fiscal year which they say is invested in the enterprise—that it is in earnings put back into the business. That amount may have gone back into the business. But with about $6,500,000 still owing to the taxpayers, it is not a surplus,—not yet. It went into a distinct business activity of the city, which under the rules of normal business should pay its way. To pay bond interest and due bonds out of taxes is equivalent to asking the stockholders of a private company to go down into their pockets to pay interest on a mortgage and then pay the mortgage itself. What corporation would call any money on hand or invested in the business a surplus, until the money raised by assessments had been paid back? At the present time, then, if the Power Bureau should reimburse the taxpayers, there would be no surplus.

High Lights and Side Lights

The foregoing are some of the high lights: the ever-mounting, multiplying bond issues; free use of the aqueduct leaving the Water Department to run behind; failure to set aside moneys each year to pay bonds as they fall due; failure to show reduction in rates to cover the unpaid taxes; and the large sum still owing to the taxpayers, for money taken out of taxes to pay interest and to retire bonds.

There are many side lights equally as interesting.

Formerly the Edison company furnished light free for the city hall, for police and fire stations and other city buildings. Since taking over the Edison system, the Power Bureau has charged the city for this service and has been paid out of taxes. My best information is that this will amount to $100,000 a year.

A Word About Rates

While the Power Bureau made a small reduction of rates in 1917, it increased its rates in 1920 by 12½ per cent. This increase absorbed the old reductions and made a rate higher than the private companies charged before municipal power came to Los Angeles. Meanwhile the Railroad Commission has reduced the rates of the privately owned companies at least twice and today the Edison company claims that in some sections outside Los Angeles its rates are actually less than the rates of the Power Bureau. And the Edison company pays ten per cent of its receipts in taxes.

Since it bought out the Edison company, the Power Bureau has never had sufficient power to supply the City of Los Angeles and has therefore been compelled to purchase from the Edison company. Last year its former competitor furnished the Bureau more than half its power, and at times, 75 to 80 per cent. This cost the Power Bureau in 1923, $1,400,000. When these purchases began, in 1917, the Edison's rate as a wholesaler was one-third higher than it is today. But the Bureau has never passed the reduction on to the rate payers. The figures show that in 1923 the Power Bureau paid the Edison company $600,000 less than if the 1917 rates still prevailed. A recent further cut will reduce the cost by more than $700,000 for 1924.

The Ratio of Employees to Customers

It may be that these savings on power have gone to new employees, for there seems to have been a great increase in numbers in the Power Bureau. When the Edison system was taken over, there was one employee to every 244 consumers. Today under the Power Bureau there is one to every 95 consumers. That is, under the private company one employee was enough for 244 consumers, while under the Power Bureau one employee is required for every 95 consumers. This is an increase of 275 per cent. Consumers have increased in the same period only 45 per cent.

Last August the Power Bureau borrowed from the city treasury $500,000 to pay for necessary repairs and extensions, without which they could not go on giving service to new customers. The request was for two millions, but there was only $500,000 available, and the Bureau had to be content with that. This money is being paid back in monthly installments of $50,000, without interest. At the time this loan was made, it was openly stated in Los Angeles that the Power Bureau owed $3,000,000 for materials and supplies bought within the last year or two. This statement has been repeatedly made, and has not been denied, although the amount has been stated as less than three million. The bond issue which was defeated last May was expected to supply funds to liquidate this indebtedness. When it failed, arrangements were made to carry many of the creditors indefinitely by paying them interest at 6 per cent.

Los Angeles' Industrial Growth

The Power Bureau makes a very plausible claim that the great industrial growth of Los Angeles is due to low power rates. But it seems that the greatest increase in the use of power for industrial purposes has been not in the city, but in the territory outside. The great users of power have their plants in places like Vernon and Torrance, just outside the city limits, where power is supplied by private companies. The best available figures show that the power load in the Los Angeles metropolitan area increased 223,000 horsepower during 1923, of which 39 per cent was inside the city limits and 61 per cent outside. Of the increased load inside the city limits, the Power Bureau secured less than one-half, and its proportion of the increase in the metropolitan area was only 18 per cent. That is, the use of power increased on the private systems more than five times as fast as on the municipal system. This confirms the claims of the private companies that rates are lower outside of Los Angeles than within.

It is claimed by the Power Bureau that its rates are lower than prevail in San Francisco. But in Los Angeles, opponents of the Power Bureau say that while the lighting rates are higher in San Francisco, the average power rate is lower by about 8 per cent. R. H. Ballard, general manager of the Edison company, testified before Congress recently, in an inves-

tigation of the Colorado River project, that the Los Angeles rates in effect in San Francisco would mean a reduction there of about $500,000 a year. He said that in Los Angeles no taxes are paid, and that in San Francisco the light and power corporations pay 10 per cent of their earnings in taxes. In other quarters I am told the San Francisco companies pay on their electric business in that city over $1,000,000 a year in taxes. This means that if tax exempt they could undersell the Los Angeles Power Bureau about $500,000 a year.

Relationship Between Rates and Votes

In fixing rates, the Railroad Commission proceeds upon the theory that cities depend upon agriculture and industry. If agriculture and industry flourish, towns and cities spring up, with homes, stores, offices and shops to be lighted. On the other hand, if farms and factories do not thrive there are no towns or cities requiring light. Therefore under regulation, rates rather favor industry and agriculture. Public ownership seems to go upon the opposite theory, and fix and favor lighting rates first. Of course the light consumers constitute the greatest number; many more voters use light than power, hence the policy of favoring the light consumer in rates seems to be good politics. But even if popular, such a policy is not sound. It would never build a city from the beginning. It works only where municipal management is resorted to after a city is built up.

Public ownership naturally seeks monopoly. The Power Bureau is now trying to buy out the Los Angeles Gas & Electric Corporation, thus removing its last competitor. The claim is made that the Power Bureau cannot achieve complete success until it gets this property. There is talk of savings by consolidation, of efficiencies, great and small. However, the Los Angeles Gas & Electric Corporation seems to be thriving on the same rates charged by the Power Bureau, and is stubbornly resisting all efforts to purchase. In 1923 its power load grew 11 per cent to the Power Bureau's 20. Its lighting load grew 33 per cent to the Bureau's 15. It declares it can make good returns to its stockholders in competition with the Power Bureau, although its income is taxed, its bonds are taxed, and the Power Bureau is tax free.

Competition or Monopoly?

There are those in Los Angeles who believe that the separate existence of the Gas & Electric corporation is wholesome, for with it removed by absorption, the Power Bureau would become an unregulated monopoly. As long as it remains, the Power Bureau must meet a measure of competition, which is somewhat regulative. Nobody outside of itself has a word to say as to rates or management. It fixes its own rates and establishes its own standards. Without competition it could raise rates; almost certainly it would be indifferent about service. It is generally admitted in Los Angeles that the best service is where the Bureau is in direct competition with the Los Angeles company. Competition is always reciprocally stimulating. The poorest service is found where the Bureau has a monopoly, for it is monopoly entirely unregulated.

The Los Angeles general tax rate, both city and county, is $3.96; San Francisco's is $3.47. There are in Los Angeles a great many improvement districts, all of which levy assessments for municipal purposes, often for things done in San Francisco out of the general levy or from bonds. One of the districts, Municipal Improvement District No. 9, has an assessment rate of $3, which added to the general tax rate makes a total of $6.96 in that district. The average in these special districts is five cents on the hundred, so it may be said that the average tax rate in Los Angeles is $4.01 per $100 of valuation.

For the last fiscal year Los Angeles increased its assessed valuation by 27 per cent. Before that, its average yearly increase was only 8 per cent. I am told that San Francisco has increased its assessed valuation only 5 per cent for the year 1923-1924, and that its average over a long period does not exceed that.

Jeopardizing the Schools

Los Angeles' extraordinary growth is bewildering. A proposal is now before the people to vote $34,000,000 in September for schools. The Tax Reduction Alliance makes this statement:

> "We have today 655 half-day schools, and there are hundreds of students who are unable to attend because of the crowded conditions. The enrollment for February of this year shows the astonishing increase of 33,500 over February of last year. To provide school rooms for this increase alone would require more than a fifteen-room school building every week."

The president of this organization, Frank O. Bristol, formerly a member of the Board of Education, says:

> "If Los Angeles wants to commit suicide the best way that I know of is to let it be known in the East that we do not care properly for our school children. But we will not do this. We will provide for them and we will not let the petty plans of the professional politicians of the Power Bureau cause us to neglect the schools and the children.
>
> "As between the dubious proposition of municipal ownership of public utilities and the urgent necessity of more schools, I am for more schools."

On this platform Mr. Bristol and the Tax Reduction Alliance are opposing the bond issue of twenty-one millions for power, which is coming up on May 6. That is, they are urging the people not to vote for that issue if by so doing they will jeopardize the school bonds in September. The point made is that schools must have first consideration; that the children of the city must not be neglected for the ambitions of the Power Bureau.

Power and Growth

Burdette Moody, business agent of the Power Bureau, talked before the San Francisco Commonwealth Club a short time ago. He credited the Power Bureau with much if not all of the industrial growth of Los Angeles. But it must have occurred to those who heard him that the moving picture industry and the capital that followed it contributed to this growth; that the great oil discoveries at Signal Hill and Santa Fe Springs had something to do with it; that capital brought by men and women who have

retired from business in other parts of the country and moved to Los Angeles had something to do with it; that the great tourist traffic pouring into Los Angeles and the south had some effect; and finally, that the somewhat lower labor costs, due to great numbers coming without fixed employment, and being willing to take what offered, had something to do with the city's industrial development as well as its phenomenal growth in population. The city has grown wonderfully these last few years. It has perhaps a million people, but the two million Mr. Moody speaks of are yet to arrive. It has had a great industrial growth, but the Power Bureau has not done it all alone. Other factors and other forces have helped.

If Mr. Moody had communicated with the Oakland and the San Francisco Chambers of Commerce, he might not have made some of the claims he did. I learn from these bodies that:

San Francisco added 250 new industries and mercantile enterprises during the week ending March 4, 1924. And last year, 1923, business enterprises to the number of 3,703 located within the limits of that city.

Census figures show that the manufacturing output of Oakland has increased 315 per cent since 1914 as compared with 146 per cent in Los Angeles.

According to the Oakland Chamber of Commerce, 46 nationally known industries have located in Oakland. These industries have built plants for supplying the entire West Coast and Australia and the Orient as well. Only one or two have opened branches in Los Angeles.

The growth in San Francisco and in Oakland is certainly some answer to Mr. Moody's claims. The Los Angeles Power Bureau does not operate in either city and yet both grow, perhaps in great and substantial industries faster than Los Angeles.

Some Things Los Angeles Needs

Los Angeles owns its own water and its own power. But as yet it has no city hall worthy of the name; no great auditorium; no civic center except prospectively; no fine or distinguished public buildings. The public library is still housed over the village drug store, although a library building is now under way.

San Francisco has all these, city hall, auditorium, public library, civic center. They give the city distinction and advertise a wisely directed public spirit.

Difference Between Private and Public Ownership

The experience of Los Angeles demonstrates that the essential difference between municipal and private ownership is not one of physical plant or operating organization which supply service, nor in the standards of service, nor in the rate schedules, but in the character, the policy, and the purpose of the management. Municipal ownership began there as elsewhere with a group of men who desired to engage in the power business, but, having none of the equipment or the capital necessary, they proposed to undertake it provided the city would furnish all the funds, assume all the risks, exempt them from all taxes, and give them the preferred status and immunities of municipal employers. They invested no money, took no chances, and no matter how many pledges are broken, how many promises unfulfilled, no responsibility attaches to them for the result. The people pay the bill.

Privately-owned utilities, on the other hand, must regard the service they render as a business, subject to all the laws, regulations, and ethical standards of the business world, asking for it neither special privilege nor immunity from taxation. They, in good faith, invest their capital and assume the risks and the hazards incident to such enterprises. They become as much a part of the community as any of its other enterprises or activities.

Must the People Suffer and Pay?

There is, then, just this great difference: one is responsible and can be held to the performance of its duty; the other cannot. One must keep its engagements, fulfill its promises, or lose money, while the other has no money to lose, no investment to safeguard, and can therefore, promise anything under the dome of heaven, trusting that the people may forget, and if they don't, that they will have to pay anyhow.

Politics has been defined as the passionate pursuit of the second best. In government, state or municipal, national too for that matter, politics is ever present; it follows the government into business if the government goes into business. And where the nation or a state or city goes into business, it gets politics; it enters into the passionate pursuit of the second best.

Hydroelectric Plant Being Erected in New South Wales

THE first step in the development of hydroelectric energy in the Clarence River Valley, northern New South Wales, is being taken under the direction of Messrs. Armstrong Whitworth & Company, Ltd., of London. The Nymbodia hydroelectric scheme is the first of such dimensions in northern New South Wales. The site of the power house is near the township of Nymbodia, about 26 miles from Grafton, where the stream attains its greatest volume. The estimate of the cost of the work is £100,000.

Current will be generated at the power house at 6,000 volts and will be stepped up to 33,000 volts for transmission to South Grafton and Ulmarra. A 1,200-kw. transmission line is being constructed to those centers and at both places substations will be erected from which electricity will be distributed throughout the towns and adjoining districts.

With 1,600 hp. at the power house, the peak loads at the distribution centers will be 1,420 hp. and it is estimated that 3,090,000 kw-hr. can be sold annually with a load factor of 33 per cent. The new plant will enable factories to be built along the Clarence River and is a part of the movement to counteract the tendency of centralizing industrial undertakings in the large cities and bring the factory nearer the source of raw material.

Reintroducing the Proposed California $500,000,000 Socialistic Venture

IN 1921 there was introduced in California an initiative measure known as the Water and Power Act. It was overwhelmingly defeated in 1922 by a vote of nearly two and a half to one. Despite this, the ardent proponents of the bill again are offering it to the voters of the state for their approval or rejection. While the measure is the same in every respect as the 1922 model, we offer this discussion of its provisions to refresh the memory of the electrical industry.

PETITIONS are in circulation to place on the ballot by initiative at the election to be held November 4, 1924, the same proposed constitutional amendment, called the Water and Power Act, which was rejected by the voters at the election in November, 1922, by a majority of 353,849. The vote against the Act two years ago was nearly two and a half to one.

Notwithstanding the faults of the Act exposed by criticism during the former campaign, the promoters of the measure have not altered it by so much as a syllable. Apparently their position is that the Act, born of omniscience, was, is and always will be, perfect.

While readers of the Journal of Electricity were made familiar with the Act in the previous campaign, the measure, if enacted, would affect the electrical industry so radically that it is well to re-state the principal features of the proposed legislation.

It creates a board of five members to be appointed by the governor. The chairman shall be the executive officer, devoting all his time to the duties of the office and receiving a salary of $15,000 per year. The other members shall receive a per diem of $20. The legislature may increase their compensation. Provision is made for overlapping terms of four years each. The legislature may by a two-thirds vote of all its members remove members of the board from office for dereliction of duty, corruption or incompetency, and the legislature shall provide by law for removal of members by recall. The majority of the board shall constitute a quorum.

The board shall have power to acquire by any legal means, including condemnation, land, water or any property or rights "necessary or convenient for the purposes of this article" (i. e., of the Act), and also to acquire, construct and operate works, even including railroads, to do anything and all things "necessary or convenient for the conservation, development, storage and distribution of water, and the generation, transmission and distribution of electric energy."

The board shall have power also "to purchase, acquire, produce, manufacture or otherwise provide facilities, materials and supplies, raw or finished, and any property or thing necessary or convenient to the accomplishment of the purposes of this article." In other words, the board can go into any branch of the electrical business or virtually any other business.

Powers granted to the board, among many other things, are to require the reservation of water from appropriation for such periods as it may provide, to supply water or electric energy or both to the State, political subdivisions and other users, and, subject to the provisions of the Act, to prescribe the terms of contracts, and fix the price thereon and collect the same. That is to say, the board is not subject to regulation by the Railroad Commission and may fix its own rates for the water or electric energy it sells.

Income to Pay Investment Cost

The Act says that the rates established shall be such as in the board's judgment will provide, in addition to the expenses of operation, maintenance, depreciation, insurance and reserve for losses, funds to pay the principal and interest of all bonds issued as the same fall due, together with all sums which may be advanced from the general fund and interest thereon as provided in the Act. Rates shall include a charge which, in the judgment of the board, will pay within fifty years the cost of the particular project; except that where the rates are intended to provide for the repayment of expenditures made in acquiring or constructing distributing systems for political subdivisions, they shall be so fixed as in the judgment of the board will effect a repayment with interest within twenty-five years. These directions to the board concerning what is to be included in rates are qualified by the interesting provision that "the board may change rates when in its opinion advisable to meet changed conditions and shall always keep its rates as near the amount required to pay such cost and expenses as practicable and shall fix similar rates under substantially similar conditions." Competition with a privately owned public utility would probably constitute a "changed condition" which would authorize the board to sell below cost and fall back on the taxpayers for the deficit.

The board may also acquire or construct for political subdivisions distributing systems for water or electric energy "bought from the State" upon terms that "in the opinion of the board" will repay to the State within twenty-five years the cost thereof with interest.

The board may appoint, define the duties and fix the compensation of such employees as it may require subject to such civil service regulations "as the board may provide." That is to say, the board is granted unlimited power to hire and fire and is not subject to the state civil service regulations.

Board Has Unlimited Powers

In case the framers of the Act have overlooked anything they have provided that the board shall have power "to exercise all powers needful for the accomplishment of the purposes of this article and such additional powers as may be granted by the legislature." The purposes of the Act are broadly stated "to conserve, develop and control the waters of the State for the use and benefit of the people."

In addition to the board a "finance committee" is established composed of the Governor, Controller, Treasurer, Chairman of the Board of Control and Chairman of the Water and Power Board, all of whom shall serve without compensation. This probably would be a perfunctory committee. It has no supervision over the board but shall issue and sell bonds upon written requisition of the board containing certain specified information about the purpose or projects for which the money is required. The committee must issue the bonds on receipt of the proper requisition from the board but may determine the form, rate of interest, maturities, denominations and other terms of the bonds.

$500,000,000 in Bonds

The Act authorizes the issuance of bonds of the State of California "not exceeding" the sum of $500,000,000 to be issued and sold from time to time to carry out the purposes of the Act, and the "full faith and credit of the State of California" is pledged for the payment of the principal of the bonds as they mature and the interest accruing thereon as it falls due. The interest rate on the bonds shall not exceed six per cent per annum.

Bonds shall be sold only for the acquisition of such property and rights and the construction, development, **operation** and **maintenance** of such projects as the board may deem necessary or convenient for the accomplishment of the purposes of the Act; but the committee, upon requisition of the board, shall sell bonds not exceeding in the aggregate five million dollars, the proceeds of which shall be placed in a revolving fund to be used by the board for the purpose of defraying its expenses, acquiring property and supplies, carrying charges during construction and "meeting other costs incurred in carrying out the purposes of the Act." It is obvious that this highly flexible five-million-dollar revolving fund can be used for many purposes.

If at any time the revenue from projects shall be insufficient to pay the **interest** or principal of outstanding bonds as it falls due, the committee, with the consent of the Governor, may sell bonds to provide funds to make such payments of interest or principal. The payment of old obligations of interest as well as principal by new bond issues is authorized, according to the Act, "in order to avoid appropriations from the general fund and resulting taxation," but careful provision is also made for meeting deficits by taxation.

It is contemplated by the Act that the revolving fund shall be replenished by each project to the extent of the advance made to that project from the proceeds of bonds sold to provide funds for the cost of such project.

Revenues of the board "except proceeds from the sale of bonds" shall be paid into the state treasury and applied first, to overhead, costs of operation and losses; and second, to the payment of interest on principal of bonds; but if at any time the fund in the state treasury applicable to the payment of interest or principal of said bonds shall be insufficient for that purpose, moneys shall be "temporarily" advanced from the general fund for that purpose, and the Act provides "there is hereby appropriated from the general fund in the state treasury such sum **annually** as will be necessary to pay such interest and principal, and there shall be collected each year in the same manner and at the same time as other state revenue is collected such sum in addition to the other revenues of the State as shall be required to pay the sums appropriated for payment of interest and principal as herein provided."

Taxes Guarantee Bond Interest

By this singular provision, if projects fail to earn revenue sufficient to meet the obligations of the bonds with respect to interest and principal, the deficit shall be made up out of taxes and these taxes shall be collected like other state revenues from the public utility companies and other corporations from which state taxes are now collected. By this ingenious device the privately operated public utilities and the other corporations which pay state taxes, are automatically required to guarantee the principal and interest of the bonds issued by the Water and Power Board. Taxes collected for that purpose from private corporations will, of course, be passed on to their customers. The framers of the Act do not trust the state legislature to meet the deficits of the board by appropriating funds at successive sessions of the legislature but propose to write into the constitution a continuing appropriation automatically effective whenever the board shall be unable out of its revenues to meet its bond obligations.

All moneys paid from the general fund in the state treasury for principal or interest of such bonds are supposed to be returned to the general fund out of the revenues of the board "as soon as the same become available"; but, of course, if the board does not earn the money it can never pay it back. In brief, the effect of these provisions is that the board is to meet expenses and pay off the capital investment and interest thereon out of earnings, if possible, but any deficits are to be made up out of taxes and these taxes are to be collected from the corporations which now pay taxes directly to the state and those corporations will, of course, pass on to the public the losses suffered by the Water and Power Board. Resort to the taxpayer may be delayed, how-

ever, by issuing bonds to pay interest and costs of operation and maintenance.

State and political subdivisions shall have a preferred right to water and electric energy controlled by the board "as against privately owned public utilities selling water or electric energy to the public." Railroads are, therefore, virtually placed on a parity with the state and political subdivisions, since they do not sell water or electric energy to the public.

There is also this curious and not entirely clear provision which has never been adequately explained: "As between those otherwise equally entitled, the board shall supply water or electric energy to political subdivisions near the source of supply, to the extent of their reasonable needs, in preference to those more remote."

Act Is Discriminatory

The Act prohibits the board from supplying water to a privately owned public utility for the production of electric energy and from supplying directly or indirectly to privately owned public utilities "which sell electric energy or water to the public" (again excepting railroads by the qualification) more than twenty per cent of the total amount of electric energy or water under its control, and from extending contracts therefor over a longer period than five years, and prohibits that any such contract be renewed prior to one year before its expiration. Under this provision the board could sell any quantity of electric energy or water to a railroad.

Any political subdivision or group of political subdivisions contemplating the development of water or electric energy must submit its plans to the board for "suggestions and criticism," and the board may acquire and develop any such project unless the political subdivision claiming the same shall have adopted plans and estimates for the development, and authorized bonds to cover the cost thereof, or shall do so within two years after the board shall have notified such political subdivision of its readiness to proceed with such development.

Can Condemn Private Property

In any condemnation proceeding under the Act, the determination of the board that the taking of the property described is necessary shall be conclusive evidence of such necessity, and in any such proceeding the State may take immediate possession and use of any property required for the purposes of the Act by paying into the court such amount of money as the court "upon five days' notice to the adverse party" may determine as reasonably adequate to secure to the owner of the property immediate payment of just compensation for such taking and any damages incident thereto.

Property appropriated to public use may be condemned for the purposes of the act but not property owned or controlled by any political subdivision used or proposed to be used for supplying water or electric energy, or both, without the consent of the political subdivision.

Every public office, board, commission or agency must supply the board with all data and information in its possession required by the board. The act is self-executing.

Objections Are Numerous

The objections to the proposed act are fundamental and numerous. An unregulated, appointed board is empowered to pledge the credit of the State to the extent of half a billion dollars by issuing tax-free bonds and to speculate with the money in unspecified water or power ventures or any incidental business, which would include, for example, **dealing in electrical supplies,** as is now being done in California by certain irrigation districts. The board could favor one section as against another while using the credit of all. The board could build up its own political machine and fix its own rates for the water and power served.

So elastic is the act that preferential rates could easily be granted to favored communities, industries, or individuals. No regulation of service or rates is contemplated. If successful, the projects are supposed to pay their own way and take care of the capital investment in time. If unsuccessful, the general fund of the state, contributed by taxpayers, must make up deficits.

Nor could politicians make rates contrary to economic conditions. The cost of generating power is the same for state or private company. Low rates in the face of unfavorable conditions would only result in passing the burden on to the taxpayers in the form of increased taxes.

Some of the Consequences

Politically and economically the act is bad. Bureau government in its worst form exercising arbitrary control over industry, political management of business enterprises, the power to levy taxes placed in the hands of officials very remotely responsive to the public, speculation in hazardous enterprises with the taxpayers' money without the taxpayers' consent, the erection of a powerful political machine, and the breaking down of the electrical industry as it has been established in California by private enterprise—these would be some of the inescapable consequences of the Act.

Nor is there any reason to expect that the Act would result in better service or lower rates or any benefit to the public.

Our present system gives us the efficiency of private management with full protection to the public through regulation.

Sound regulation backed by intelligent public understanding and combined with community of interest created by public ownership of securities is far more desirable than a business in which politics takes the place of private enterprise.

Common sense revolts against the idea of undoing all that has been accomplished by private ownership under regulation and delivering the great basic electrical industry into the hands of unregulated politicians.

The Need for Electrical Inspection in Rural Districts

By Claude W. Mitchell

Electrical Engineer, Board of Fire Underwriters of the Pacific

IT has been said that in some parts of California vegetation is so rank and of such rapid growth that if one wishes to pick a pumpkin it is necessary to ride a horse and lasso the pumpkin because the vines grow so fast. Not being very adept in the use of the lariat I have never endeavored to harvest pumpkins by this method, but I have seen the rapidly growing "vines" in the form of transmission and distribution lines which are reaching out into the most distant of the populated rural districts. Ahead of these lines and particularly into the sparsely settled parts of the country have gone the farm lighting plants. Thus, in one way or another, the wonderful boon of electricity is being brought to the inhabitants of the districts far removed from the cities.

Unfortunately, in a large number if not a majority, of the electrical installations outside certain city limits, the good spirit of electricity, come to aid and bless mankind, is accompanied by an evil spectre in the form of hazard to life by injury or death and to property through damage or destruction by fire. Fortunately, that condition does not exist in all installations.

Where the installation is well made in conformity with certain standard regulations, with workmanship of a good quality, where material, devices and equipment also comply with certain minimum standard specifications and where the installation and utilization equipment are used properly, there is no question but that electricity provides the safest means for furnishing light, heat and power.

After an original installation is completed it devolves upon the user as to whether or not the equipment and installation shall have proper treatment and use. Prior to that time the responsibility rests, usually, with the installer. User and installer may be the same person.

Not infrequently the owner or occupant, somewhat of a "Jack-of-all-trades," purchases materials and makes the installation himself. He is not proficient in the methods of wiring. He is unversed in, if not entirely ignorant of any rules or regulations that may have been accepted generally as necessary to be complied with in order to obtain safety. He is unfamiliar with the materials and devices and is likely to be guided in his choice by cost rather than quality and if his purchases should chance to be made from an unscrupulous dealer he may obtain articles which have been tabooed for use by inspection departments and, if used at all, must be "unloaded" on such as he. He is without sufficient knowledge of the potential hazards of a poor installation to cause him to investigate these points or to hesitate to make the installation in the easiest and cheapest way possible. And, lastly, he is without the jurisdiction of any regulatory or administrative body which might compel him to comply with certain standards.

Considering, then, these qualifications of the worker and his materials (mayhap, his tools as well) and the lack of restrictions upon him, it is not to be wondered at if the result of his labors is an installation fraught with potential hazards. It requires but the coincidence of conditions or, possibly, lapse of time to cause these hazards to change from the potential state to that of actuality. The resultant damage to life or property cannot be foretold.

Causes of Sub-Standard Installations

It is regrettable that such a condition exists, but not so deplorable when brought into existence in the manner just outlined as when a condition almost, if not equally, as hazardous is created by those who should and do have the knowledge of which the owner-installer may be ignorant. For it is true, that many sub-standard installations are made by men who have the knowledge and ability necessary to enable them to do the work in an approved manner. Unscrupulous contractors and workmen are responsible for some of this defective work and some of it is done by those who would prefer to do it properly but cannot if they are to compete successfully with poor workmanship and sub-standard materials at correspondingly lower prices.

When the owner or builder asks for bids he is very apt to accept the lowest. Undoubtedly it is his honest belief that it is more economical to install the cheaper materials, believing it will serve his purposes as efficiently as the more expensive. He does not realize that the difference in cost may represent the difference between hazard and safety. This should not be taken to imply that the more expensive the installation the better it will be, but it is true that there is a certain minimum cost for an installation below which the materials are of questionable quality and workmanship is of an inferior grade.

These conditions, which have been outlined in the preceding paragraphs, are to be found occasionally in the larger cities. But, in general, they exist in the districts which properly may be called rural, in the suburban districts or those lying just outside of or close to city limits and in the smaller cities and towns where no electrical inspection service is maintained. This fact gives a clue to a possible solution of the problem.

The larger, as well as some of the smaller, cities and towns maintain departments for the regulation and inspection of electrical installations and equipment. The general class of work to be found in any one of these places depends upon the efficiency of its inspection department. That efficiency involves not only the personnel of the department but the standards and rules which serve as a guide for the inspectors.

The most generally accepted standards are the National Electrical Code and the National Electrical Safety Code. Where these have been adopted together with such other regulations as are necessary to meet local conditions and the department makes an honest endeavor to abide by their requirements without partiality, conditions are most favorable. Contractors and workmen know what is expected of them and what they may expect and the one who pays for the installation obtains one with a maximum of safety and efficiency.

When such results can be obtained in municipalities through the operation of the inspection department it is reasonable to suppose that a similar condition might be obtained in the suburban and rural districts by the creation of similar inspection service. Such rural inspection is not impossible and to the question "Within whose jurisdiction does it lie?" the most logical answer seems to place the burden upon either the state or county authorities. Municipal inspectors have no authority outside city limits. Public service corporation inspectors have no authority or interest beyond that part of the equipment owned or installed by the corporation. It would seem, then, that to provide adequate inspection departments for suburban and rural districts a movement must be started with the object of convincing state or county authorities of the necessity for this inspection and securing action which will create such departments and provide the necessary laws for their efficient operation.

Electric Heating in the Esparto Union High School

By A. Strauch

Electric Heating Engineer, San Francisco, Calif.

ELECTRIC heating of schools has proved itself in California. The results experienced have been satisfactory, the cost of operation has been low and the convenience and desirability have been notable. Numerous schools are now electrically heated and the number so equipped is increasing rapidly. Those schools located in rural or semi-remote districts find this means of heating particularly advantageous as it offers a solution for the janitor problem and eliminates fire hazard.

A typical example of rural school heated electrically is the Esparto Union High School at Esparto, Calif. This building erected by Gould & Johns, contractors, Stockton, Calif., was designed and supervised by W. H. Weeks, architect, 369 Pine Street, San Francisco. The building is constructed of reinforced concrete with light buff brick exterior and a heavy red tile roof; the rooms are large, light and airy; there is a small basement of two rooms, and most of the building is one-story in height, although the domestic science department is located on the second floor. There is a large auditorium with a 24-ft. ceiling and this room, like the rest of the building, is heated with electric heaters of the flush type inserted in the walls. This installation was engineered by and made under the supervision of the writer.

In the class rooms and the auditorium, where it is necessary for persons to sit near the heaters, they are baffled in order to entirely eliminate radiant heat. This makes it possible to sit directly in front of the heaters without discomfort. All of the heat being conducted into the air of the room, the result is that the room temperature varies but a few degrees and practically uniform temperature is maintained. In the offices and corridors standard Wesix flush type heaters are used.

The area to be heated consists of 207,803 cu. ft. and the equipment comprises 44 heaters with a total capacity of 188½ kw. A list of the rooms showing the size, volume, loss, outside wall surface and capacity of heaters installed is given below as are also the consumption, maximum demand and bills for energy during the months it has been operating. This installation is operating on the Pacific Gas and Electric system on their regular power schedule, "P-1 maximum demand," in which the rate is as follows:

50 to 99 hp. of maximum demand

The first	50 kw-hr. per hp.	2.6c. per kw-hr.
The next	50 " " "	1.7c. " "
The next	150 " " "	1.1c. " "
Balance		.8c. " "

100 to 249 hp. per maximum demand

The first	50 kw-hr. per hp.	2.3c. per kw-hr.
The next	50 " " "	1.5c. " "
The next	150 " " "	1.0c. " "
Balance		.7c. " "

The maximum demand in any month will be the average horsepower input as indicated by meters provided by the company. The minimum charge is $1 per hp. of maximum demand for the first 50 hp. and 65c. per hp. for all demand in excess of 50 hp. but in no case less than $50. Where the primary use is seasonal, the minimum charge may be made

cumulative over a 12-months' period. In this case the rate has averaged 2.38c. per kw-hr.

The heaters were figured to have capacity sufficient to maintain a temperature difference of 35 deg. F. between the outside and the inside of the building, with two changes of air per hour. The following table gives the sizes of the various rooms, together with the heater capacities installed for each room.

First Floor	Size Ft.	Glass Sq. Ft.	Outside Wall Sq. Ft.	Floor Sq. Ft.	Volume Cu. Ft.	Kw.
Right Lobby	12x22x12½ 10x10x12½	60		364	4,550	3.3
Office	12x19x12½	36	114	228	2,910	2.5
Principal	16x22x12½	112	438	352	4,400	6.0
Chemistry Laboratory	22x32x12½	184	216	704	8,800	8.4
Physics Laboratory	22x32x12½	184	216	704	8,800	8.4
Class Room	22x26x12½	128	197	572	7,150	7.5
" "	22x26x12½	128	470	572	7,150	8.4
Left Lobby	12x24x12½	60		288	3,600	3.3
First Aid Room	10x12x12½	30	95	120	1,500	2.0
Women Teachers	11x18x12½	30	108	198	2,475	2.5
Freehand Drawing	22x30x12½	208	442	660	8,250	10.0
Typing Room	18x22x12½	128	97	396	4,950	5.0
Bookkeeping Room	22x30x12½	208	455	682	8,525	10.0
Library	15x22x12½	96	367	330	4,125	5.0
Study Hall	22x34x12½	200	225	748	9,350	10.0
Class Room	18x22x12½	128	97	396	4,950	5.0
" "	22x26x12½	144	456	572	7,150	8.4
Corridor	8x276x12½			2,208	23,185	13.3
Total,		2,064	3,993	10,094	121,820	119.0
Sewing Room	22x32x10½	156	410	704	7,392	8.4
Girls' Retiring Room	10x10x10½	26	100	100	1,050	1.6
Cooking Room	22x32x10½	156	410	704	7,392	8.4
Dining Room	12x12½x10½	26	100	150	1,575	2.5
Corridor	11x100x10½			1,100	11,550	6.6
Total,		364	1,020	2,758	28,959	27.5
Auditorium	36x56x24					
Stage	12x36x20	348	1,536	2,448	57,024	42.0
Class Rooms		2,308	5,013	8,892	107,794	120.0
Lobby and Corridors		120		3,960	42,985	26.5
Auditorium		348	1,536	2,448	57,024	42.0
Total,		2,776	6,549	15,300	207,803	188.5

The table below shows the kilowatt-hour consumption, horsepower of demand and the monthly bill for heating in this school. The average bill of $79.78 per month for the winter months is commendably low in view of the volume of the building—207,803 cu. ft.

Year	Month	Kw-hr.	Max. Demand	Bills
1923	Nov.	1,040	59 hp.	$ 55.85
"	Dec.	2,240	118 "	94.20
1924	Jan.	6,160	128.7 "	101.16
"	Feb.	5,440	80.4 "	97.76
"	Mar.	1,920	64.3 "	49.92

Average bill for five winter months, $79.78 per month.

The installation has proved highly satisfactory in every respect and the principal, H. A. Sawyer, is enthusiastic over the service it has given. The power company considers this one of its finest heating installations and as marking the opening of a new era in school heating by electricity.

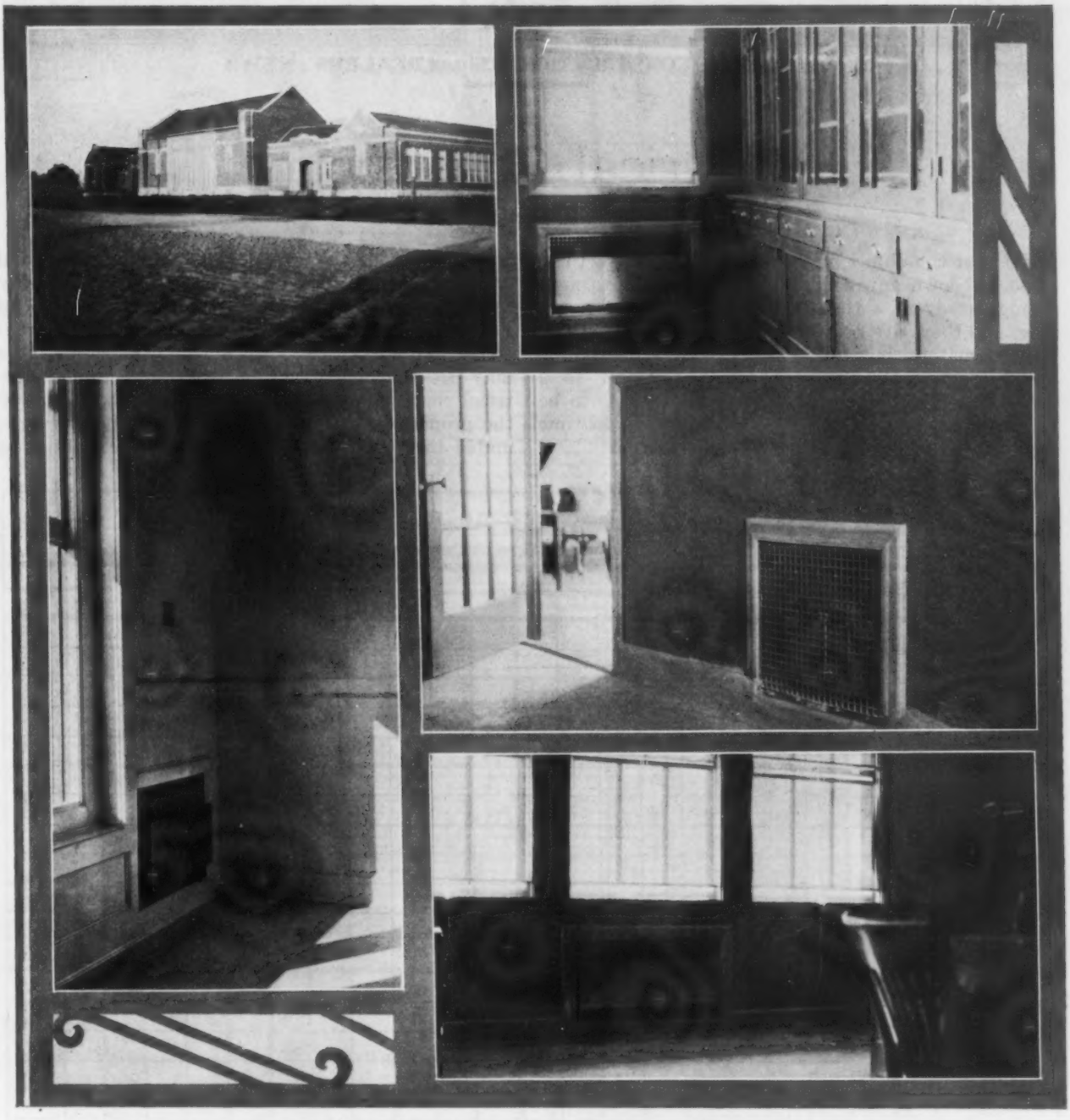
The Pacific Gas and Electric Company is so pleased with the results obtained that on March 15, with the consent and cooperation of the principal and the Esparto school board, they held a demonstration and inspection of the building and heating system to which all interested persons were invited. There were addresses on "The Development and Use of Electricity," "The Heating of Schools by Electricity," "The Reading of the Electric Meter," and "The Interpretation of Power and Lighting Bills." Several reels of moving pictures were shown, a dinner was served by the girls of the school, and a dance was held in the evening at which the Pacific Gas and Electric Company orchestra furnished the music. The entertainment was planned and carried out through the efforts of H. A. Sawyer; R. T. Stevens, superintendent of new business department, Pacific Gas and Electric Company, Sacramento; C. E. Sedgwick, manager of the Solano district, Pacific Gas and Electric Company; C. E. Wyatt, local manager of the Winters office, Pacific Gas and Electric Company. Guests were present from cities more than 100 miles distant. It was the consensus of opinion that this installation has proved beyond question that electricity when used with the proper type of heating equipment is the most modern and satisfactory agent for school heating in certain localities. Some of its outstanding advantages are, first, initial cost of installation generally half that of a steam heating system (in this case considerably less than half); second, flexibility, it being possible, due to the three-heat control of the heaters, to heat any room separately at any time to any desired temperature; third, safety and lowered fire risk; fourth, absence of attention and maintenance, no attention whatever being required from the janitor as each teacher controls the heat in her room as required; fifth, cleanliness and healthfulness, there being no effect on the air whatever.

The domestic science department of this school is now equipped with a 5-kw. Wesix automatic water

heater and all of the cooking tables are arranged for electric stoves. It is the intention, shortly, to replace the present cooking equipment with electric ranges.

The wiring has been installed and is so arranged that each pupil will be able to use a range, although, of course, there is no thought of buying a range for each cooking table. It is the intention to purchase the most up-to-date equipment in order that students may be made thoroughly familiar with recent advances in cooking equipment. It is quite possible that both automatic and non-automatic ranges will be purchased in order to demonstrate the working characteristics of each type. Other electrical kitchen equipment is already installed and the purchase of the electric ranges will bring about complete electrification of the domestic science department.

The cost of operation of the heaters has been less than was estimated and has been well within the most sanguine expectations. The installation has proved its practicability and has shown many advantages that will be capitalized by architects and school boards in other localities. It has, too, served to show students the possibilities of electric application and its adaptation to the home.



An idea of the method of electrically heating the Esparto Union High School can be gained from the above illustrations. At top left is shown a view of the school itself. The other pictures show the types of Wesix heaters used.

COAST Outlet
ELECTRICAL CONSTRUCTIONISTS' and DEALERS' NEWS

Electrical Construction

By E. Earl Browne

IT is not the object of this and subsequent articles to lay down any hard and fast rules for estimating, as every estimator thinks his methods the best and there are nearly as many methods as there are estimators, but there seems to be a disposition on the part of all interested to come nearer to a standard, which is a favorable sign, and it is to be hoped that many of the loose systems will in time be entirely eliminated.

It seems to the writer that if simplification and economy in industry can be accomplished so readily as has been done in the recent past by the American Engineering Standards Committee, that the lost motion in estimating can be somewhat "taken up." This may not seem important to many, even in the electrical contracting business, but if they will analyze the proportion of jobs received to the number estimated they will find that the average proportion is

ARCH'T W. F. Jones LOCATION S. Mission St. 80'-E.11th St. SCALE 1/4" ESTIMATE NO. 486

OWNER A. G. Smith BID TO Architect DATE 3/1/24 HR. 12 M BID PRICE $ 1570.00 DATE 2/28/24

FLOOR	CEILING HEIGHT	OUTLET (WATTS) 40	60	Misc.	SWITCHES S. P	3 W	4 W	LOCK	DOOR	RECEPTACLES SINGLE CONV.	DUPLEX CONV.	30 AMP. CONV.	FLOOR	BOX	SIGN
BASEMENT				6	3		0			0					
1ST				20	5		2			1					
MEZZANINE				--	---		-			-					
2ND				23	17		0			2					
3RD				23	17		0			2					
4TH				23	17		0			2					
5TH				23	17		0			2					
~~6TH~~ Roof				1	0		0			0					
7TH															
8TH															
9TH															
TOTALS				119	76		2			9					

55 ft. Store #1---3 #10
55 " #2---3 #10
50 " 2nd Floor---3 #12
60 " 3rd " ---3 #12
70 " 4th " ---3 #12
80 " 5th " ---3 #12
40 " Service---3 #1
½ #14 Location
11 20 2nd Floor
9 20 " "
22 25 " "
17 25 " "
58 30 3rd " "
59 90 4th " "
58 90 5th " "
100 100 Corridor
36 30 Basement
3 12 Store #1 W
6 12 " " "
9 12 " " "
5 24 " " "
23 50 #2
414 590
1 #
1656
590
2246
54 Waste
2300

Fig. 1.

19 to 1. In other words, for every $1,000 worth of work estimated, they actually close and perform but $50 worth. This gamble of 19 to 1 against the estimator is, in my opinion, the reason for much loose estimating, as it is certain that unless a person sees a somewhat better chance than this of getting a job, he becomes careless in his methods and is prone to "guesstimate" rather than "estimate."

It was with this thought in mind that the planing mill men of San Francisco established their Quantity Surveying Bureau which has proved to be shown during the past five years. The Association of Electragists, International, has released to its members during the past year not only simplified and complete estimating forms but also a manual of estimating which is a thorough treatise on the subject and is alone worth the membership fee and dues.

One of the simplest forms has been arranged by the H. E. Barrow Company, and when used in combination with a special sheet in their "Pacific Coast Electrical Data and Sales Book," makes for sim-

MATERIAL LABOR-SUMMARY

QUANTITY	MATERIAL	MATERIAL UNIT	EXTENSION	LABOR UNIT	EXTENSION
119	Ceiling and Bracket Outlets, Complete	60 ea	71 40	80 ea	95 20
76	S. P. Push Switches, Complete	120 "	91 20	95 "	72 20
	3-W " " "				
	4-W " " "				
2	Lock " " "	280 "	5 60	95 "	1 90
9	Convenience Outlets, Complete: Single / Duplex / 20 Amp.	155 "	13 95	1 05 "	9 45
	Floor " "				
2300	½-in. Conduit, (Black) 2 #14 Wires	1530 "	351 90	1440 c	331 20
	½-in. " " " 3 #14 "				
	½-in. " " " 4 #14 "				
	½-in. " " " 2 #12				
	¾-in. " " " 4 #14 "				
260	¾-in. " " " 3 #12 "	2175 c	56 55	1644 c	47 94
	¾-in. " " " 2 #10 "				
110	¾-in. " " " 3 #10 "	2300 c	25 18	17 60 c	19 45
	¾-in. " " " 2 #8 "				
	1 -in. " " " 6 #14 "				
	1 -in. " " " 5 #14 "				
	1 -in. " " " 3 #8 "				
	1 -in. " " " 2 #6 "				
	1¼-in. " " " 3 #6 "				
	1¼-in. " " " 2 #4 "				
	1¼-in. " " " 3 #4 "				
	1½-in. " " " 3 #3 "				
	1½-in. " " " 2 #2 "				
	1½-in. " " " 3 #2 "				
40	1½-in. " " " 3 #1 "	9560 c	38 24	32 13 c	12 85
	2 -in. " " " 3 #0 "				
	2 -in. " " " 3 #2/0 "				
	2 -in. " " " 3 #3/0 "				
	2½-in. " " " 3 #4/0 "				
2	Panel Boards, Complete (6) Circuits $2600 Bryant c/o	2900 ea	58 00	1425 ea	28 50
4	" " " (4) " & Cabinets & Doors	2256 "	90 24	1020 "	40 80
	" " " ( ) "				
	" " " ( ) "				
	" " " ( ) "				
1	Service Switch, " (100) (250V) (3, P)	2395 ea	23 95	605 ea	6 05
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
6	Sub-Feed " (30A) (- V) (3, P)	756 ea	45 36	3 73 ea	22 38
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
		$934.07			
	less 5%	46.70			
		887.37			
	Incidentals		1000		
206	Inspection	25 ea	5150		
	Labor	683.92			
		$1571.29	$934 07		$683 92

Fig. 2.

of such value, not only to their own craft, but also to the public by establishing standards clearly defined and easily understood. This idea, while not in general use in this country, has been practiced in foreign countries for several years to the satisfaction of all concerned.

In the absence of such a plan in our branch of the building industry it behooves all of us to submit our ideas and from a review of these to pick the best. Various electrical contractors' associations, as well as individuals, have in the past made up forms and it is to be admitted that much improvement has been

plicity and rapidity in estimating, with the further value that it is so shortened by grouping materials that the chances of omitting items are reduced to a minimum. A typical estimate on their form is shown in Figs. 1 and 2.

It is, of course, impossible to list all materials in a printed form as a reminder list. This applies particularly to special signal systems such as are installed in large private office buildings, hospitals, etc., but as these classes of jobs are in the minority they cannot be given consideration in a form which is to be used for the majority of jobs.

A Practical System of Accounting for Contractor and Dealer

By F. V. Mitchell

ONE of the most essential points towards the successful operation of an accounting system is a thorough understanding of the general ledger accounts as set forth in the chart of accounts. It is from the accumulation of entries made in these accounts that we are enabled to obtain the necessary information for the preparation of the Statement of Condition and Profit and Loss Statement at the end of each closing period. As the sole desire is to paint a true picture of the results of operation in these statements, it can readily be seen how important their correct usage becomes, and with this idea in mind I am presenting the following analysis of these accounts:

No. 1—General Ledger Account — Bank Account.—The debit balance of this account represents the cash in bank at end of each month and should agree with the amount as shown in the "bank balance" columns of the cash book-journal. This account should be debited with the total of the "deposits" column and credited with the total of the "checks drawn" column of the cash book-journal monthly. This debit balance should be reconciled with the bank statement monthly by adding the total of the outstanding checks and deducting the total of the last day's cash receipts not deposited until the first day of the following month.

No. 2—Petty Cash Fund.—The debit balance of this account represents the amount of permanent working fund established for petty cash disbursements and for change in cash register. This account should be debited with the amount of the original check drawn and cashed to establish this fund, from the sundries column of the cash book-journal as explained in the first article of this series.

No. 3—Accounts Receivable.—The debit balance of this controlling account represents the total amount due by customers at the end of each month, and should agree with the total of the balances of the individual accounts in the accounts receivable ledger. This account should be debited and credited monthly with the totals of the accounts receivable Dr. and Cr. columns, respectively, of the cash book-journal.

3-A—Provision for Doubtful Accounts.—The credit balance of this account represents the reserve set up out of profits against which to charge losses on worthless accounts when they occur. This account should be credited and account No. 63 debited with one per cent of net charge sales for period closed. All customers' accounts considered uncollectible should be debited to this account and credited to accounts receivable at the end of each closing period.

No. 4—Notes Receivable.—The debit balance of this account represents the balance due on notes held by the business. It should be debited with the amount of notes when taken and credited with all payments received on such notes from the sundries Dr. and Cr. columns of the cash book-journal, respectively.

No. 10—Merchandise.—The debit balance of this account at the beginning of each period represents the value of physical inventory of merchandise on hand, which should include material on jobs in process unbilled, and should be debited monthly with the total of the merchandise Dr. column of the cash book-journal. At the end of each closing period when a physical inventory is taken, this account should be credited and account No. 52, Cost of Goods Sold, debited with the difference between the total debit balance of this account and the amount of the physical inventory to reduce the account to the physical inventory value for the beginning of the new period, in accordance with Fig. 1.

No. 11—Labor in Process.—The debit balance of this account at the beginning of each period represents the amount of labor paid on jobs in process

ACCT NO. 10 — Merchandise

DATE	ITEMS	FOL.	✓	DEBITS	DATE	ITEMS	FOL.	✓	CREDITS
1923					1923				
Jany. 1	Inventory			198765	Dec. 31	Cost of Goods Sold	12		1206560
31	Purchases	1		86350	31	Balance			184275
Feby 28	"	2		97245					
Mch. 31	"	3		106450					
Apl 30	"	4		98735					
May 31	"	5		75120					
June 30	"	6		117675					
July 31	"	7		94310					
Aug 31	"	8		82415					
Sept 30	"	9		96170					
Oct 31	"	10		105725					
Nov. 30	"	11		113590					
Dec. 31	"	12		121455					
				1387535					1387535
1924 Jany. 1	Inventory			184275					

Fig. 1.

unbilled, and should be debited monthly with the total of the labor Dr. column of the cash book-journal At the end of each closing period this account should be credited and account No. 52, Cost of Goods Sold, debited with the difference between the total debit balance of this account and the amount of labor ascertained to have been paid on jobs in process unbilled, in accordance with Fig. 2.

No. 20—Automobiles.—This account should be debited with the cost of all automobiles purchased and credited only when an automobile is sold or traded, from the sundries Dr. and Cr. columns of the cash book-journal, respectively.

20-A—Provision for Depreciation.—This account should be credited and account No. 62 debited at the end of each closing period from the sundries Cr. and

count should be credited and account No. 62 debited at the end of each closing period from the sundries Cr. and Dr. columns of the cash book-journal, respectively, with 20 per cent (yearly rate) of the debit balance of account No. 22 at the beginning of the year.

Note:—The difference between the debit balances of accounts 20, 21 and 22, and the credit balances of accounts 20, 21 and 22, and the credit balresents the net book value of fixed assets.

No. 30—Accounts Payable.—The credit balance of this controlling account represents the total amount due creditors on open account at the end of each month, and should agree with the total of the balances of the individual accounts in the accounts payable ledger. This account should be debited and credited monthly with the totals of the accounts

ACCT NO 11 Labor in Process

DATE	ITEMS	FOL.	DEBITS	DATE	ITEMS	FOL.	CREDITS
1923				1923			
Jany 1	Balance		71840	Dec. 31	Cost of Goods Sold	12	651255
31	Total Paid	1	46375	31	Balance		27955
Feby 28	"	2	57960				
Mch 31	"	3	56235				
Apl 30	"	4	64120				
May 31	"	5	53815				
June 30	"	6	58610				
July 31	"	7	59855				
Aug. 31	"	8	61530				
Sept 30	"	9	52745				
Oct. 31	"	10	47830				
Nov 30	"	11	49695				
Dec 31	"	12	48360				
			679270				679270
1924							
Jany 1	Balance		27955				

Fig. 2.

Dr. columns of the cash book-journal, respectively, with 33-1/3 per cent (yearly rates) of the debit balance of account No. 20 at the beginning of the year.

No. 21—Furniture and Fixtures.—This account should be debited with the cost of all furniture and fixtures purchased and credited only when any such articles are sold or traded, from the sundries Dr. and Cr. columns of the cash book-journal, respectively.

21-A—Provision for Depreciation.—This account should be credited and account No. 62 debited at the end of each closing period from the sundries Cr. and Dr. columns of the cash book-journal, respectively, with 20 per cent (yearly rate) of the debit balance of account No. 21 at beginning of the year.

No. 22—Tools and Equipment.—This account should be debited with the cost of all tools and equipment purchased and credited only when any such articles are sold or traded, from the sundries Dr. and Cr. columns of the cash book-journal, respectively.

22-A—Provision for Depreciation.—This ac-

payable Dr. and Cr. columns, respectively, of the cash book-journal.

No. 31—Notes Payable.—The credit balance of this account represents the total amount of outstanding notes payable. It should be credited with amounts of notes when issued and debited with payments made when due, from the sundries Cr. and Dr. columns of the cash book-journal, respectively.

No. 40—Capital Account.—The credit balance of this account represents the net worth of the business at the beginning of each period. This account should be credited with the profit or debited with the loss at the end of each closing period.

No. 41—Personal Account—This account should be debited monthly with the total of the personal account Dr. column of the cash book-journal and should be credited with a monthly salary allowance from the sundries Cr. column. The balance of this account, if any, at the end of each closing period should be transferred to capital account No. 40.

National Code Questions Are Answered by Engineer

The Journal of Electricity has made arrangements with Claude W. Mitchell, electrical engineer of the Board of Fire Underwriters of the Pacific, to answer questions on the 1923 edition of the National Electrical Code. All readers are invited to forward their inquiries to The Editors, Journal of Electricity. The answers will be published as soon as possible following the receipt of inquiry.

Question. In reference to the matter of identified conductors. Is it necessary, in complying with the 1923 Code, to have the terminals of wiring devices and appliances identified?

Answer. The Electrical Committee, National Fire Protection, over the signature of Dana Pierce, chairman, has issued the following statement which answers this question fully:

"The Electrical Committee of the National Fire Protection Association (Code Committee) has been advised that there is some misunderstanding regarding the subject of identification of terminals of wiring devices under the 1923 edition of the National Electrical Code published as the Regulations of the National Board of Fire Underwriters for Electric Wiring and Apparatus as recommended by the National Fire Protection Association.

"The subject of identification of terminals was considered by the Electrical Committee in the preparation of this 1923 edition, but no rules or requirements were adopted and it was not and is not now the intention of the committee that any rules in this edition should require such identification or be interpreted to do so.

"The matter is still in the hands of a special technical sub-committee which is expected to report later with recommendations for a future edition of the Code when it shall have considered all phases of the matter among which are the form of markings, which devices do and which do not require such identification, the necessary time required to permit compliance with new rules, if adopted, etc.

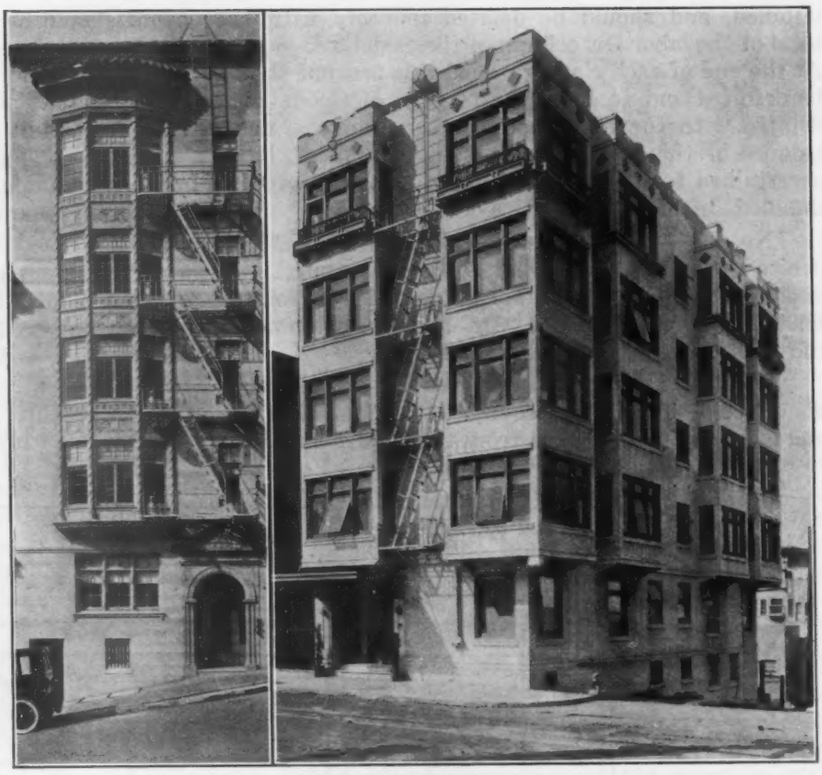
"While some manufacturers of wiring devices have already begun the production of some devices with identified terminals the practice has not yet become general either with all makers or on complete lines of devices.

"There are still large quantities of devices without identified terminals in the stocks of manufacturers, jobbers, and others for the disposition of which reasonable time should be allowed.

"For these reasons the Electrical Committee judged it inadvisable to include requirements of identified terminals in the 1923 edition. The subject is receiving further careful consideration by the committee and by the manufacturer in anticipation of possible action at a future date."

The Underwriters' Laboratories has also issued a statement on this matter, which statement is as follows:

"It may also be noted that in accordance with the foregoing, Underwriters' Laboratories is not requiring the identification of terminals of wiring devices examined and tested by it for inclusion in the List of Inspected Electrical Appliances."



Two San Francisco apartment houses that have just been equipped with electric ranges. Both of these buildings are in high-class residential districts and it is claimed that the electrically equipped kitchens assist in their easy rental.

Electric Ranges Becoming Popular For Apartment Houses

It is constantly becoming known that electricity continues to serve humanity faithfully and well and that its application for domestic purposes is increasing daily. It is only in recent years that there has been extensive use of domestic electrical equipment but this form of application is growing in popularity. The comfort and convenience of electric ranges, for example, have become so well known to the progressive home and apartment house owner that these ranges are now in demand. It remains, generally, only to select the type desired for the particular premises.

One of the most recent extensive installations of electric ranges is that in the Rosenstein Apartments, San Francisco, Calif. This apartment is located in one of the best residential sections of the city and was for some years equipped with gas ranges. However, Mr. Rosenstein realized that he must keep his apartments up to date and decided to take out the gas ranges and to equip each apartment with a modern electric range. With the assistance of Harry W. Lippert, California representative for the Estate Stove Company, a special model range was procured and twenty of these ranges were purchased to replace the former equipment. Owing to the character of the district in which the apartment house is located and to the fact that all apartments bring a high rental, it was necessary to install ranges that combined efficiency with beauty and a model was selected that was finished in enamel and nickel plate. An interesting phase of this installation is the fact that the purchase and installation of these ranges involved the expenditure of about $3,000, whereas the purchase of gas stoves for these apartments would have cost only about $600.

Another interesting installation, also in a San Francisco apartment building, has just been made in the Electra Apartments. The owner of this building, who selected the same model range as in the above apartment, was so impressed by the electric range that he not only bought them for his property but also named his house after the goddess of electricity. Dealers everywhere are finding electric ranges readily salable and an attractive line to push, not only as merchandise, but also because of the wiring jobs that always follow such sales.

Sacramento Electrical Society Holds Monthly Meeting

The regular monthly meeting of the Sacramento Valley Electrical Society was held Wednesday, April 9, at the Hotel Land, Sacramento, Calif., at 6:30 p.m. Harold Willis of the San Francisco-Sacramento Railroad presided. Fred Links led in group singing, and S. E. Gamble of the Westinghouse Electric & Manufacturing Company announced that five new members had been secured. It was stated that over 1,200 members had been enrolled in the Courteous Service Club.

The Great Western Power Company of California had charge of the program, J. W. Anderson acting as chairman. F. H. Woodward, general sales manager of the company, San Francisco, gave a short talk, and several interesting stories were told by various members. A moving picture showed how the longest high-voltage submarine cable in the world was laid, this being

an 11,000-volt cable with a capacity of 15,500 hp. extending from Richmond, Calif., to San Francisco. It was manufactured by the American Steel & Wire Company and laid under their supervision.

Unusual Sales Letter Employed To Sell Electric Ranges

As a means of reaching prospective electric range customers and of arousing their interest in the service that electric ranges give, the Great Western Power Company, Sacramento, Calif., decided to use sales letters of unusual type. The company offered a prize for the best letter submitted by a member of its force and the number of entries exceeded all expectations. From the letters submitted, that printed herewith was decided upon as being the most novel in its presentation of the electric range story and the prize was awarded to the author, C. H. Payne.

Dear Sir:—

ARE YOU A TRAVELING SALESMAN FROM BIRMINGHAM—like Mr. Johnson? with headquarters at home—sometimes?

The morning after the night before; home from a three weeks' trip out among the tanks; frost on the pumpkins and apartment-house roofs; clanging of street cars and honk of auto horns; Little Ben registers eight a.m.

"How come?" says Mr. Johnson, rousing friend wife from noisy slumber, "HOW COME?"

"What's the matter, George?" mutters fellow life-prisoner, swallowing pillow-case.

"How come no breakfast?" exhausts Head of Family. "It's eight P.G., you've died and gone to—er—Heaven and I'm due in office at ten. How Come?"

"'Salright!" chatters better half, strangling on blanket, "breakfast's ready."

"Huh?" clashes H.O.F., "How Come?"

"Electricity."

"What!" shifts H.O.F., strips gears and skids out of bed onto floor.

"A beautiful ELECTRIC RANGE, George," chatters Mrs. Geo., hastily donning a negligee and enfolding him in a dressing gown. "A surprise for you and a treat for me. Come on," dragging him, stumbling, down the hall into the kitchen. "Sit down. Breakfast will be on the table in a jiffy."

"How co——?" murmurs H.O.F., opening muffler.

"Automatically," shifts Mrs. Geo., opening oven door. "Cooked while you sleep; heat regulated by the clock. See, George, golden brown," placing biscuits before him. "Aren't they beauties?"

"Hot Dog!" opens up Mr. Traveling Man From Birmingham—and reaches for the honey.

"See, George, here's the oven, here's the griddle and here are the attachments for iron, toaster and percolator. All clean; no dust, no dirt, no fumes, no smoke—just turn a switch."

"How much does she set us back?" sputters George thru honey.

"The prices are from $57 to $240. I took the most expensive."

"Sure," backfires George, "you always do."

"But you like it, don't you?"

"Uh huh," masticates George, "pass the honey and don't bother me."

YOU MAY NOT BE A TRAVELING MAN FROM BIRMINGHAM—OR LIKE HONEY—but we have an Electric Range that will interest you.

"JUST INVESTIGATE."

Yours Electrically,
GREAT WESTERN POWER CO.

Manufacturer's Advance Card Is Used to Sell Appliance Line

Dealers have become so accustomed to receive advance cards from salesmen from whom they buy, these cards advising of the date on which the salesman expects to be in town, that the cards are now looked for and are kept for reference until the salesman has left. This is particularly true of men who represent manufacturers and who, generally, do not cover a territory so often as do the sales forces of jobbers and those firms located within the dealer's home field.

The illustration herewith shows a novel form of advance card used by the A. J. Lindermann & Hoverson Company, Milwaukee, Wis. This card shows pictorially some of the major lines manufactured by the company.

Reproduction of the advance card used by the salesmen of the A. J. Lindermann & Hoverson Company to announce to merchants the date of expected arrival in the dealer's city.

Accounting Problem Questions Answered by Expert

The Journal of Electricity has made arrangements with F. V. Mitchell, public accountant of San Francisco, to answer, in these columns, such questions as may be asked on accounting. All readers are invited to forward their inquiries to The Editors, Journal of Electricity. The answers will be published as soon as possible following the receipt of the inquiry.

Question:

Taking as an example a store doing an electrical contracting and appliance business of $100,000 per annum.

One department composed of washers, ironers and vacuum cleaners of, say, $12,500 per annum, and where it was desirable to place the manager and sales force of this department on a commission basis, how would you apportion the overhead of this department and how would you arrive at a basis of fixing the amount of commission that could be paid salesmen consistent with reasonable margin of profit to the house?

Answer:

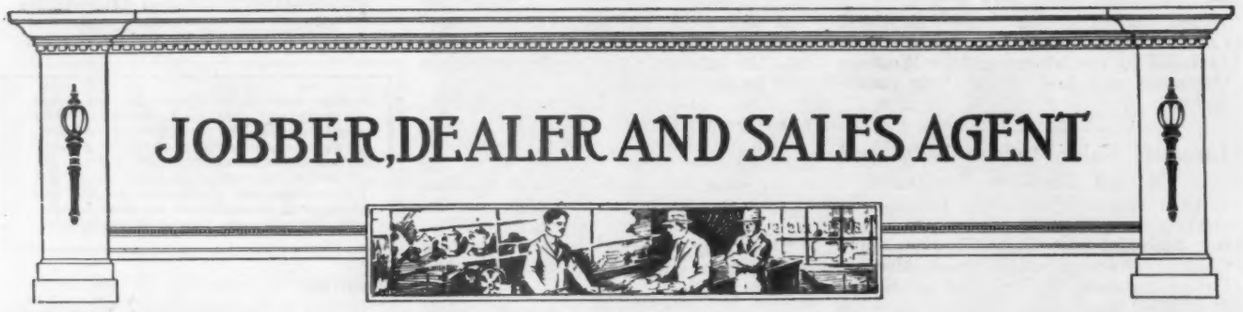
If there has been no departmental analysis of expenses made on the books, it is impossible to apportion overhead on an accurate basis. The apportionment of overhead expense over the several departments can only be accomplished by the proper arrangement of the books to include that essential feature.

The percentage of overhead in this department, excluding salaries of department manager and sales force, has averaged as high as 15 per cent of the sales in numerous instances. Using for example an average gross profit of 35 per cent, there would be a margin of 20 per cent of the amount of sales left to pay salesmen's and department manager's commissions. Commissions to them of 15 per cent would leave a net profit of only 5 per cent in accordance with the following illustration:

		Per Cent
Sales	$12,500	100
Cost of merchandise	8,125	65
Gross profit	4,375	35
Overhead expense	1,875	15
	2,500	20
Commissions	1,875	15
Net profit	$ 625	5

Association of Lighting Fixture Dealers Organized

The lighting fixture dealers of Sacramento, Calif., have recently formed a Fixture Dealers' Association in conjunction with the local Electrical Contractors' and Dealers' Association. The need of separate meetings of those interested in lighting fixtures has long been felt; the problems of this branch of the business are so different from contracting for electrical wiring only, and many of the members of the regular association are not only interested in selling fixtures, while some are exclusively fixture dealers. It is hoped that the purposes of both organizations will be better served under the new arrangement. L. M. McGinnis of the Scott Plumbing & Electrical Company has been elected president of the new association.



June Bride Week to Stimulate Sale of Appliances

Letters Sent Out Notifying California Dealers of Opportunities of Increasing Sales During Intensive Campaign

June Brides residing in California will have their homes completely equipped with the necessary electrical appliances, if the aim of the California Electrical Cooperative Campaign is achieved. Window displays, posters, cooperative advertisements, news stories in local papers and stuffers to be sent with all May electric bills are to be used to apprise the public of the fact that the June Bride should be given electrical appliances for her future comfort.

The aim of the cooperative organization is to arouse interest in electrical gifts so that dealers throughout the state may capitalize on the interest that will be worked up by the cooperative advertising schemes. Plans for the week June 2-7 are much the same as those followed in former years, the thought being that the public has become acquainted with the advertising used before and that prospective customers would recognize the material and thus understand its meaning more quickly than they would new types of advertisements.

To acquaint electrical dealers with the contemplated sales drive, the California Electrical Cooperative Campaign has recently sent out a letter describing the June Bride Week idea. The letter sent to the California dealers reads as follows:

Real money was made by those dealers who took advantage of June Bride Week last year. Were you one of those for whom it rang the cash register? If so you will be glad to hear that plans are now under way to repeat it; if you were not one of the wide-awake ones you lost money that you can't afford to lose again this year so you had better start planning right now to get on the band-wagon.

HERE IS THE IDEA! Whenever June—the month of weddings—comes around thousands of people ask themselves what they can give as wedding gifts to their newlywed friends, and they usually end up by buying pictures, silverware, china, or something like that, WHICH YOU DON'T SELL. They have never been made to appreciate the many qualities which would make any one of a number of electrical appliances the most acceptable gift which they could purchase, and YOU COUL D SELL THEM.

WE'LL HELP YOU teach them that the proper gift is an electrical gift. We'll prepare attractive window display material for your use, we'll give you cuts for newspaper advertising which will tie this advertising in with your windows, we'll work with the newspapers carrying your advertising and get them to print some good interesting stories about electrical appliances as wedding gifts so the readers will pay more attention to your ads and your windows. All this we'll give you AT NO COST.

BUT we can't drag customers into your store, take their money from their pockets and put it in your cash register. You should make good use of the material we give you by fixing your windows up attractively; you should advertise your wares in the local newspapers in competition with the merchants who will be advertising art goods and house-furnishings as wedding gifts, and you should practice SALESMANSHIP upon every customer who comes in your store. We'll tell them—You sell them. And it means dollars and cents in your pocket if you get behind the drive and boost the idea of "Give Something Electrical."

And we are going to offer prizes, too. Eleven cash prizes aggregating $100 offered for the best trimmed dealers' windows. Judgment will be reached by consideration of photographs submitted by the dealers of their windows. And to every dealer sending in a photograph which is not listed among the prize winners we will pay $1.50 to reimburse him for the expense of having it taken. Start planning now to have one of the prize winning windows.

Please fill out and mail the enclosed postcard RIGHT NOW to let us know if you will do any newspaper advertising during the week of June 2-7 and in what papers, so we may order the cuts for you, and arrange with the papers for the publicity articles. Wishing you a most successful season, we are

Yours very truly,

CALIFORNIA ELECTRICAL
COOPERATIVE CAMPAIGN.

The aid of all jobbers' salesmen, calling on dealers in the state, has also been solicited in order that the dealers may be notified of the benefits of the week from as many sources as possible. That the salesmen may have a comprehensive idea of the plans for June Bride Week the executive secretary has sent the following letter to them.

The following is a summary of the plans for June Bride Week, 1924.

This sales drive will be from June 2 to 7. The material which we are offering to the dealers consists of the following:

A three-color poster similar to that of last year (the purpose in duplicating the poster previously used being an effort to establish this as a symbol of June Bride Week); and a set of five two-color sales-stimulating slogans. A 2-in. by 3-in. line cut for newspaper advertising for the power companies and for those dealers who will carry newspaper advertising. This cut will be a miniature black and white reproduction of the window poster in order to tie-in the newspaper advertising and the window displays.

The posters and slogans will be sent to all dealers whom we have on our lists but the newspaper cuts will have to be ordered from us on a return post card which we will enclose in a letter to the dealers. We ask them, in ordering these cuts, to specify the paper in which they will be used so that we may write to the papers, informing them from whom they will receive advertising during this period. On the strength of this advertising we will then be able to request the newspapers to publish certain publicity stories which we will furnish them and which will greatly enhance the value of the dealers' ads.

Electrical Gifts for June Brides
CALIFORNIA
ELECTRICAL APPLIANCE WEEK
JUNE 2nd - 7th 1924
FOR WEDDING GIFTS
WHICH HAVE BEAUTY OF APPEARANCE, LEND EASE AND COMFORT, AND ARE LASTING REMEMBRANCES OF YOUR GOOD WISHES. CALL AT YOUR LOCAL ELECTRICAL DEALER'S STORE
18 GIFT SUGGESTIONS ON THE REVERSE SIDE
(OVER)

The stuffer, shown above, will be sent out with all California electric bills during the month of May.

As regards the delivery of this material—in every town where there is a power company office we will send direct to that office enough material to take care of all their local dealers, writing the dealers that this material is awaiting them at their local power company office. This will permit of bulk shipments. In the case of towns where there is no power company office we will make individual shipments direct to the dealers. This material will all be in the hands of the dealers not later than the last week of May.

We are offering eleven cash prizes aggregating $100 for the best trimmed June Bride Week windows which include the Campaign's material in the display. Judgment of the windows will be passed upon photographs sent in by the dealers. To all dealers sending in a picture not included among the prize winners the Campaign will pay $1.50 to reimburse them for the expense of having the picture taken, thus they stand to lose absolutely nothing and there is a possibility of winning five, ten or twenty-five dollars.

I am attaching herewith copy of an insert which is being mailed by all of the power companies of California to their consumers when they send out their May bills. In other words, practically every user of electricity in the state will have his attention called to this "Week" just prior to the special window displays of the electrical dealers.

Kindly make it a point to keep June Bride Week before the attention of every electrical person with whom you talk from now on.

Yours very truly,

VICTOR W. HARTLEY.

That the consumers of electricity in the state may be notified of the fact that electric appliances make suitable gifts for June Brides, stuffers have been supplied to all central stations. These stuffers are designed to be attached to each electric bill that is sent out during the month of May. The stuffers are printed in blue and carry an appropriate message on the front side stating that electrical gifts may be purchased at local electrical stores. On the reverse side there appears a list of eighteen suggestions.

Booth of the Southern Colorado Power Company at the Colorado State Fair. Note that every device on display will save labor in the home and will add to the ease of housework. This display formed a part of the general sales promotion plan of the company.

Colorado Company Conducts Appliance Sale Drive

Special Campaigns Put Large List of Electrical Appliances in Service in Southern Colorado Territory

The problem of the central stations of the West has not been the increase of load but, rather, the selection of the type of load increase. Natural and development conditions have brought an extensive industrial and commercial load increase and have also seen the usual domestic lighting load grow to proportions not conceived of years ago. This development, however, has had its disadvantages. The domestic load where it includes only lighting without the use of electric appliances, has been expensive of delivery and has in many cases proved very unprofitable. This has resulted in the promotion of the sale of electric appliances for domestic use and those central station companies which have not themselves maintained appliance sales departments have assisted in the promotion of the idea for the benefit of merchants.

Confronted with the problem of increasing selective load the Southern Colorado Power Company, under the direction of E. F. Stone, superintendent of the light, power and sales department, early in the spring of 1923 started a campaign for the popularizing of the use of domestic electric appliances. Extensive newspaper advertising was done and, in connection with the newspapers, electric cooking schools were held at various points. In addition to the advertising and cooperative work a direct sales plan was put into execution. Sales of more than 225 electric ranges are reported and, in addition, a campaign conducted during the month of September, produced the sale of over 125 electric percolators. A washing machine sales drive was also carried on and in the first five days of this special effort 46 machines were sold. Other effort was concentrated on combinations of electric iron, percolator and curling iron, etc., and notable success was achieved.

BLAH BOSSES BEGET BLAH EMPLOYEES

By JOE OSIER

The man who takes his wife nowhere, tells her nothing and treats her rough—

Usually winds up in a divorce court, where he wins his freedom and an alimony assessment which monthly puts a crimp in his cash on hand and—

By the same token, a business man at the head of an electrical concern, who fails to hobnob with his employees—

In the long run gets nothing but blah and plenty of that.

And, by blah, I mean do-less, shiftless, careless service—the kind of service which, if practiced for any length of time will—

Insure an early exit to any business.

"A blah employee, children," said Petie Rabbit, "is a helpless human on any feed roll who is more interested in his check than his job; who dates time from last "Sattidy" night; who forgets to remember and who constantly keeps an eye glued to the Western Onion clock, fearing that it may stop or fail to register a dragging minute."

This class of employee is found, usually, in business houses where the Hi Yu Skookum checks in late and blows early; where the executive mind turns principally to increased volume, decreased operating costs and—

Recks not a jot nor a tittle of the Franks and Fannies who sweat and grunt under a heavy weight of woe.

And, to repay him for his indifference, the privates in this army loaf in barracks and put their fingers to their noses while his back is turned on parade.

He is the boss, surely, and he could put them in gaol for good for what they think of him and so—

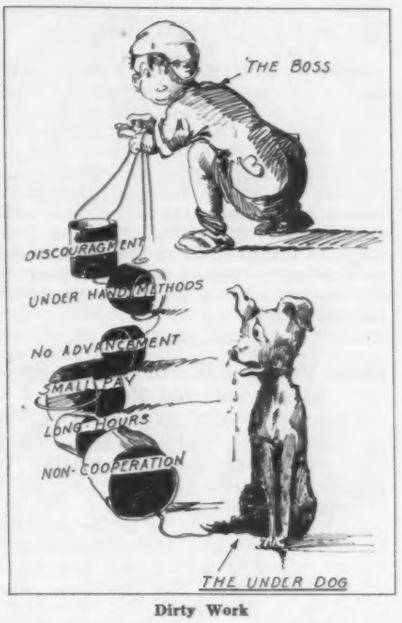
The vicious circle is complete and—

Some fine day the lock of the law is snapped on the main entrance and the boss takes his place in the line of unemployed, wondering—

Why the thusness.

* * *

The picture I paint is dreary and uninspired, I own, but any business man can blot it out with a flirt of the hand—a cheery word and a smile from the heart—because—



Dirty Work

Any employee, no matter how perverse or ill-tempered, will cherish a kind word or a friendly pat on the back even though he may realize they are given in lieu of a—

Hike in salary or a bonus check.

INDUSTRIAL NEWS

Groups Organize For and Against Colorado Springs Bonds

As expected, two definite camps have been established in Colorado Springs, Colo., on the municipal light plant issue which will be decided at a special election May 20. Both sides have launched their campaigns in the open with the opponents of municipal ownership having the support of the local newspapers. This situation, according to reports, has brought a Denver newspaper into the fight in support of the city council which has actively sponsored the proposition of the city going into the electric business, since a franchise was refused the privately owned company operating in that community.

Oliver H. Shoup, former governor of the state, is leading the opposition in the form of a voluntary committee of taxpayers which already numbers over 500. The campaign of this group is founded upon education in order that citizens may not be confused in the issues connected with the election. Newspaper advertising of that committee emphasizes that it does not represent the present central station and that the issue is not one where that company is concerned but rather one where the municipality may overburden itself unnecessarily with taxes and enter into an era of political dissipation.

On April 12, Ralph O. Giddings, a prominent merchant, was named chairman of the proponents' group and other officers, mostly business men of the city, were elected. This group is entrenched with the city council and according to newspaper dispatches, its membership exceeds the Shoup faction. Campaign offices have been opened by each side and the activity to date is said to indicate the bitterest fight yet experienced in Colorado Springs. Even money is now being offered on the outcome of the election.

Bone Power Bill Advocates Seek Signatures for Petition

Immediately following the filing of the Bone Power Bill in Washington a state-wide conference was called in Seattle, when plans for carrying on a militant campaign to secure the required 40,000 signatures to the petition for the bill were laid, and approximately $1,000 raised to defray the first costs of the campaign. The meeting was called by A. Emerson Cross, city attorney of Aberdeen, and chairman of the Washington State Super-Power League, and was attended by approximately forty persons.

A committee of seven was appointed to take charge of the campaign. The committee will have state headquarters in Seattle. Present plans provide for the sending throughout the state of a flying squadron of young lawyers, who will make speaking tours while obtaining signatures, and throughout the election campaign.

The Bone bill represents the opposition to the Reed power bill referred to popular vote by action of the last legislature, which latter measure provides for a 5 per cent state tax on gross revenues of municipally-owned generating systems selling any portion of their current outside the municipality.

Seventy-five members of the Western Washington Progressive Farmers' League recently went on record, in Everett, opposing the Bone and Erickson "super-power" bills. It is rumored that the league will initiate a measure of its own at a state-wide power meet to be called in Prosser in June, when a "bill acceptable to the farmers" will be presented. A committee composed of William Bouck, president of the organization, William Fortson and Frank Tuntsin, will prepare the bill. The Erickson bill was attacked with the charge that it was linked with activity of private power interests of the state. The meeting revealed considerable dissension between supporters of the state power schemes and the farm element, and the action of the farmers presages a split in the ranks of the "super-power" advocates.

Construction of New Substation at Roseburg Completed

The California Oregon Power Company has completed the construction of the new substation in North Roseburg, Oregon, at a cost of approximately $42,000. Control of the entire system of the Umpqua division is centered in the new substation. A 66,000-volt line runs from Dixonville and is stepped down through a bank of 1,000-kva. transformers. Another bank of transformers of the same capacity handles the output of the Winchester plant. These two feeder lines may be operated alone or together.

There are now four circuits supplying the city. In addition to these there are two street lighting circuits.

Boulder Canyon Site Favored.—A. P. Davis, former director of the government reclamation service, appearing recently before the House of Representatives Irrigation Committee, gave it as his opinion that the Boulder Canyon site was the one point on which all power and irrigation development of the Colorado River should hinge. He said work there could be carried forward at greater speed and less cost than anywhere else and that development at other locations would fit in.

Los Angeles Will Vote on Power Bonds May 6, 1924

A twenty-one million dollar bond issue for the Bureau of Power & Light of the City of Los Angeles, said to be for extensions and betterments and substations for the city distributing system over a period of three years, will be placed before the voters of the city on May 6, 1924. A $35,000,000 bond proposal which included $25,000,000 to start development on the Colorado River failed to receive the necessary two-thirds majority at the city election in June, 1923, and the power bureau is said to be badly in need of funds to finance extensions, betterments, substations, etc.

The opponents of the proposed issue contend that the work can be done for less than $11,000,000 and they suspect that a part of the money is to be spent for a purpose not revealed. It is further argued that since the city is already heavily bonded that water bonds, school bonds and bonds for other vital requirements should be voted ahead of the power bonds.

Aberdeen Seeks Federal Permit for Wynooche River Site

The City of Aberdeen, Wash., has applied to the Federal Power Commission for a preliminary permit covering a project on the Wynooche River. This application is in direct conflict with the proposed development of the Sanderson and Porter utility known as the Grays Harbor Light & Power Company.

This action on the part of the City of Aberdeen is another step in its program which is being cited as a glaring example of ill-advised municipal activity. In this instance, without having obtained rights, without having had a survey or an engineering study to determine the feasibility of the water power project or its cost, the city has voted a bond issue of $2,000,000 for its project.

The vote which authorized the bond issue provided a bare majority. It is reported that the support for the bond issue came largely from the non-property holders and the radical element.

Application for Arizona Power Sites Made.—Dell M. Potter has applied to the Federal Power Commission for a preliminary permit to construct a series of four power projects on Black River, in eastern Arizona, about 50 miles north of Clifton. Storage is not contemplated, but by using the run of the river only, through a total drop of 1,125 ft., Mr. Potter estimates that approximately 12,000 hp. will be developed.

Hoof and Mouth Disease Affects California Power Companies

Stringent quarantine regulations in combating the epidemic of foot and mouth disease which is sweeping California herds at the present time have caused considerable trouble and inconvenience to power companies in the affected regions. In the San Joaquin Valley and in certain districts in southern California the San Joaquin Light & Power Corporation and the Southern California Edison Company are extending every effort to aid state and national authorities in stamping out the disease.

The foot and mouth disease is extremely contagious. When it broke out in the herds at Merced, Calif., the San Joaquin Light & Power Corporation found itself barred from all farms, either for meter reading and inspection or for construction work. This same rigid protection from germ spreading was promptly put into force in every county of the valley. It was pointed out that any person moving from farm to farm might easily carry the germs and thereby spread the disease. Official edict kept all persons from going upon infected farms, while a voluntary quarantine which has generally been observed also kept them from going upon other farms.

However, the ordinary functioning of business had to continue. General Manager A. Emory Wishon of the San Joaquin company issued immediate instructions, after Dr. C. E. Mordoff of the medical department had conferred with the authorities, that all employees should observe quarantine rules, official or unofficial, conveying the gentle hint that anyone failing to observe this injunction would be thereby intimating that he did not like his job. Construction gangs were notified that they could go upon farm lands and into cattle fields only in emergencies. All trucks carried as part of their equipment rubber boots and overcoats and pans for disinfecting solutions. The employee entering the ranch property had to don boots and coat, sponge them thoroughly with the disinfectant, and sponge them once again upon his return to the truck. This rule has since been made less stringent, the authorities being satisfied if the men disinfect their shoes thoroughly. This does not, of course, apply to their entrance upon ranches in the infected territory, where every precaution is taken to prevent any germ carrying.

Meter readers, however, being compelled by the very nature of their business to go from place to place, are still compelled to wear the rubber coats and boots. They carry pans and sponges and in addition a spraying machine, so that their automobiles may be thoroughly disinfected. In some of the districts it has been necessary to stop all meter reading, and billing will be done on the average rate, with the understanding that corrections shall be made when the quarantine is lifted. This method will not, however, be resorted to to any great extent, as without in any way attempting to minimize the serious nature of the epidemic, the fact is that only a few herds have been infected. These herds are in territory in most cases a considerable distance away from the towns and cities and from the territory where the bulk of agricultural products is grown. Some of the infected herds have been big in numbers. Only a few head have shown actual infection, but it is the policy to slaughter and bury the entire herd in order that there may be complete eradication. The drastic measures resorted to have inevitably created some hysteria not at all justified by facts. The authorities are satisfied that they have the situation well in hand and that with cooperation in all directions they will not be long in checking any new outbreaks.

Nevertheless, there has been bred a feeling of apprehension which has made itself felt in all lines of business. The power companies have been affected, as they are always affected by any adverse business condition. However, it is pointed out that the normal functioning of business cannot long be interrupted, and in the past week there has been a gradual readjustment, with business activity on the upgrade.

Los Angeles, Calif., Light and Power Bond Issue Opposed

The efforts of the Municipal Bureau of Power and Light of Los Angeles, Calif., to obtain $21,000,000 for extensions and betterments to the municipal power system are meeting with decided opposition.

The bond election will be held May 6. The recently organized Citizens' Bond Committee, formed to try "to prevent unwarranted and unnecessary expenditure which will increase taxes and the cost of living," takes the stand that the power and light bonds do not cover an essential need and that such essential issues as bonds for schools, police and fire departments, making bridges and viaducts safe, and for an incinerating plant should come first.

The committee points out that the present bonded indebtedness of the city is $103,364,837.50, while the issues proposed amount to more than $102,000,000. The Citizens' Commitee of Ten Thousand, after an investigation of the city's water and power requirements made by a sub-committee, has adopted through its board of directors a resolution to oppose the $21,000,000 power bond issue and to urge the voters to reject it on the grounds that the amount asked is excessive.

Construction on Diamond Creek Project Stopped.—James B. Girand has withdrawn his construction force from his project at Diamond Creek on the Colorado River, in compliance with the terms of a temporary federal injunction. On the initiation of the Department of Justice, Mr. Girand has been asked to suspend work until the court can consider the advisability of making the injunction permanent.

New Bill Makes Klamath River Project Dependent upon Congress.—Representative Raker of California has introduced a bill into the House of Representatives prohibiting the granting of permits for the erection of dams, reservoirs or other works on the Klamath River for power development or transmission "without specific authority of Congress." According to reports, the bill is intended to prevent the Electro Metals Company from securing the necessary permission for its contemplated power project on the Klamath.

Licenses and Permits Rejected By Federal Commission

In order to clear its records, the Federal Power Commission has authorized the rejection of a number of applications for preliminary permits or licenses. These applications refer to projects which the applicants are not prepared to develop or for which the market will not justify development within a reasonable time. Before the action was taken, the applicants were advised that rejection was contemplated because of the lack of evidence of their ability to carry out their proposals within a reasonable time. In the following cases, the applicants raised no objection and the applications have been rejected: Southern California Edison Company, Salmon Creek reservoir and Horse Creek diversion; San Joaquin Light & Power Corporation, main stream of Kings River; City of Denver, South Platte River.

A preliminary permit issued to Joseph B. Leighton, of Miles City, Mont., covering a proposed project on the Yellowstone River, at Buffalo Rapids, has been cancelled because of the failure to carry out certain conditions of the permit. For similar reasons a preliminary permit granted to the Eureka Hydroelectric Company, of Eureka, Mont., covering a proposed project on Graves Creek, has been cancelled.

Order New Turbo-Generator for Astoria Power Plant

Due to the rapidly increasing call upon the Pacific Power & Light Company's power plant in Astoria, Ore., and in anticipation of continued increase as the new permanent buildings in the city are occupied, the company has ordered an additional generator unit for the Astoria plant. The order also calls for condenser and other auxiliaries.

The new generator will be of 5,000-kw. capacity, and is expected to be in operation about Nov. 1, 1924. The present capacity of the plant is 3,000 kw. The new equipment will cost over $200,000 installed. During the past winter the company invested more than $100,000 in improvements to its plant, changing its furnaces from fuel oil to hog fuel burners.

Utility Publishes Booklet to Instruct Consumers in Use of Service.—To give consumers suggestions in the use of both electricity and gas that it sells, the Pacific Gas and Electric Company has recently published a 24-page booklet entitled "Service Manual—A Guide to Pacific Service." The booklet contains information concerning the service offered by the company as well as suggestions as to how to secure the best results economically from the use of the service. Proper procedure to be followed in case electric service is interrupted is also given in the booklet.

B. C. Electric Railway Company to Build Line by Day Labor.—Bids received by the British Columbia Electric Railway Company for constructing a new three-phase, 34,600-volt double circuit transmission line about 13 miles along the west shore of Stave Lake were too high and have been rejected. The company will build the line by day labor.

Erection of Municipal Project Started by Loveland

Another chapter in the twelve-year struggle of the city of Loveland, Colo., against the Western Light & Power Company, later absorbed by the Public Service Company of Colorado, has been written. The city has decided to ignore the hearing completed April 10 before the Colorado State Public Utilities Commission and has begun active work on the construction of a hydroelectric plant at a contract price of $371,685.14. The contract was let to the Hendrie & Bolthoff Manufacturing & Supply Company of Denver.

A number of years ago Loveland voted bonds in the sum of $125,000 for the erection of the plant. Since that time material and labor have advanced to such an extent, so much money has been spent by the city in suits, and the demand for a larger plant has become so necessary on account of the city's growth that the city council has authorized the expenditure of $425,000 for the installation of the plant, issuing bonds, in addition to those voted by the people, to the extent of $300,000.

The latter bonds are known as "Loveland Municipal Light and Power Revenue Bonds" and are a direct tax on the people, but are to be paid out of the revenue derived from the plant covering a period of fifteen years.

The Hendrie & Bolthoff company, under contract, has agreed to take these bonds at par, in connection with the $125,000 voted by the people, in payment for construction of the plant.

The decision of the Colorado Supreme Court April 7, in the case of the town of Holyoke vs. Smith, in which the court said in effect that the public utilities commission had no authority to interfere in any manner in the affairs of a charter governed municipality, is believed by the city council of Loveland and its supporters to have disqualified the commission from sitting in the Loveland case and the city is going ahead with the construction of the plant, regardless of the commission decision which has not yet been handed down.

At the hearing before the utilities commission, the Public Service Company of Colorado, now serving the city with light and power, introduced many expert witnesses, including engineers from the University of Colorado who testified the plant would cost in the neighborhood of $600,000 and that the water flow in the Big Thompson Canyon was at times too low to handle the plant, also that a stand-by system would have to be built in addition to the plant, at a cost of $90,000.

Construction Work on Pit No. 3 Progressing Rapidly

Construction work on the Pit River No. 3 project of the Pacific Gas and Electric Company is progressing rapidly, according to P. M. Downing, vice-president in charge of electrical construction and operation. The temporary diversion dam, to divert the waters of the Pit River from its natural course during construction work, has been completed and the water is now flowing through a concrete flume. This flume is 450 ft. long, 30 ft. wide on top, 20 ft. wide on the bottom and 12 ft. deep. At the present time construction crews are working on the dry river bed building the foundation for the permanent dam. The permanent dam will be 110 ft. high.

The four-mile tunnel which will carry water from the damsite to the power house has been driven for a distance of about 5,000 ft. This tunnel will be 20,998 ft. long and 19 ft. in diameter and is to be concreted throughout.

Pit No. 3 Power House will have an installed capacity of 108,000 hp. The plant will operate under a head of 315 ft. Energy from this plant will be fed into the 220-kv. lines coming from Pit No. 1 plant at a point east of Redding and delivered at the Vaca-Dixon Substation 200 miles away.

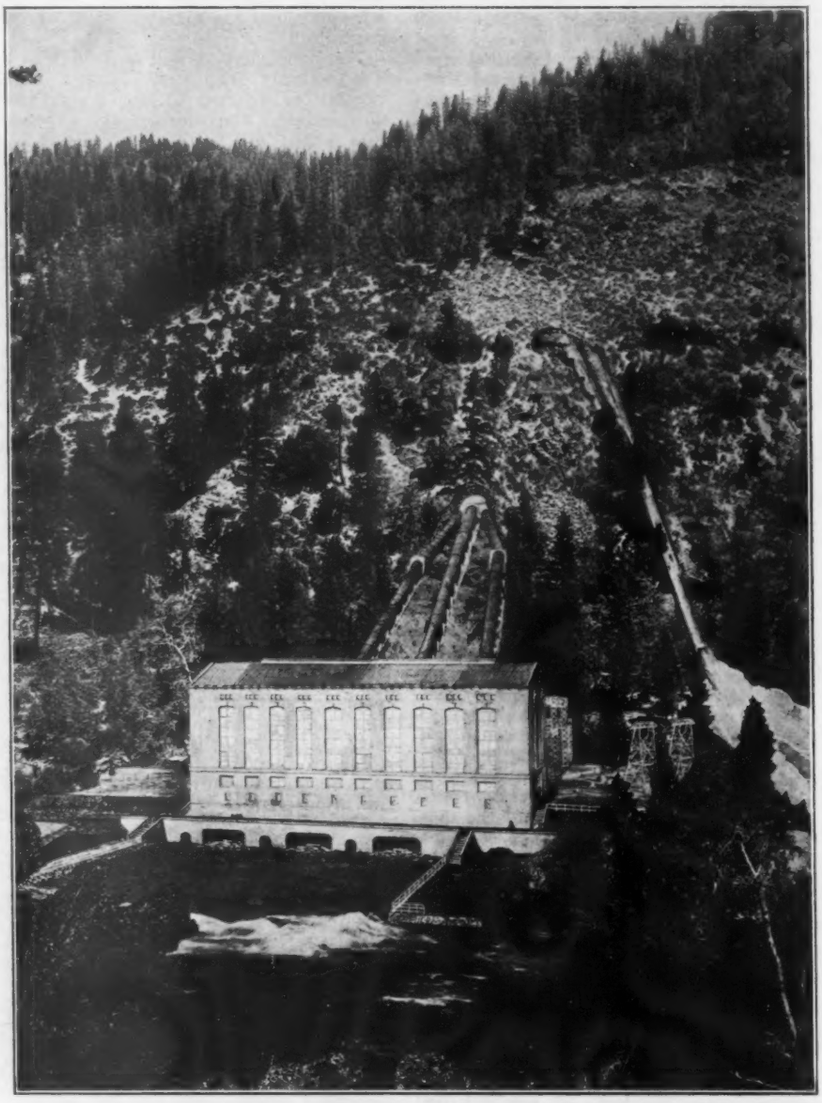
Control Equipment Described at Denver Meeting.—Members of the Denver, Colo., electrical industry were afforded an opportunity, recently, to learn of the newest developments in motor control, automatic stopping and starting and other phases of industrial control in an illustrated talk by W. C. Yates, manager of industrial control sales of the General Electric Company, with headquarters at Schenectady, N. Y. The meeting was held under the auspices of the Electrical Cooperative League.

Erection of Elwha River Plant Sanctioned by State

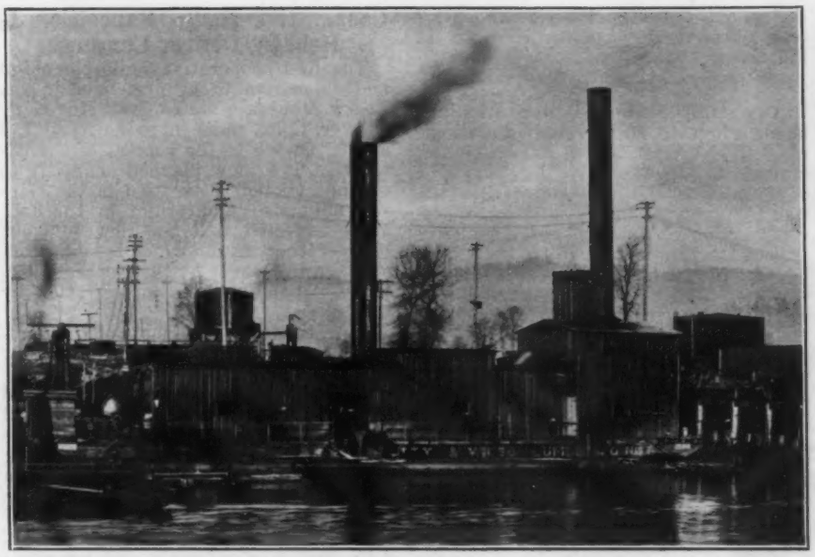
Authority to begin construction work on a 20,000-hp. hydroelectric plant on the Elwha River in Clallam County, Wash., has been granted the Northwest Power & Manufacturing Company of Port Angeles by Marvin Chase, Washington state supervisor of hydraulics. The cost of constructing the plant is estimated at $1,600,000.

The permit gives the company the right to appropriate 1,300 sec.-ft. of water from the stream. The development involves the construction of a reinforced concrete dam 15 ft. high, 180 ft. long on the top and 160 ft. long on the bottom, a main canal 3½ miles long and a power house.

The energy developed is to be used for power and manufacturing purposes and for the government navy yard at Bremerton. It is estimated that 6,750 hp. will be needed immediately to supply patrons of the company and that the entire 20,000 hp. will be needed eventually. The company now has a plant in operation lower down on the river.



Artist's conception of Pit No. 3 Power House as it will appear when the plant is completed.



Floating power plant on the Columbia River which has recently been put in service by The Long-Bell Lumber Company, of Longview, Wash.

Lumber Company Puts Floating Power Plant in Service

A floating power plant with a capacity of 1,500 kw. has been put in service by the Long-Bell Lumber Company to supply electric service to Longview, Wash. The power plant is only a temporary one and was installed to supply service to the city until the permanent plant of the lumber company can be completed. Longview is located at the confluence of the Columbia and Cowlitz Rivers, about 50 miles from Portland, Ore., and the same distance from the ocean.

In designing the temporary power plant, engineers on the project found that there was a tide variation of about 5 ft. at the site on which it was desired to erect the plant. It was determined that it would be necessary to locate the plant about 35 ft. from low water level if it was to be placed on shore. This condition called for the expenditure of a large sum of money and also considerable time would be required for the erection of the plant. In view of these facts, it was decided to construct a floating power plant that should be moored on the Columbia River. Barges of suitable size were available and one of them with the plant on board could be moored close to the shore where connections with a fuel oil line and distribution line on shore were possible. Furthermore, the floating power plant could be secured and put in service in a short time.

Within twenty-eight days after the decision to build this type of plant was reached, the plant was in operation. It consists of a barge 134 ft. long with a beam of 34 ft. and suitable cabin for covering the equipment, one 1,500-kw. Allis-Chalmers turbine, 2,300-volt generator and jet condenser. The boiler equipment consists of two locomotive-type boilers of 250 hp. each and one Hawkes boiler of 250 hp. Oil is used for fuel, two pumps of suitable size and an oil heater being installed on the barge.

A fuel oil tank on the barge has a capacity of 180 bbl. and is connected to a large storage tank on the shore by a 6-in. pipe on the dock and by a 4-in. hose from the dock to the barge. The barge has a 500-ton capacity and it was necessary to reinforce it between decks to properly support the deck load.

The turbine generator was originally 440-volt and had to be rewound. This work and that of assembling the plant was done in Portland. The barge was then towed down the Columbia River to Longview where it was moored. Care had to be taken in mooring the barge so that it would not be affected by the waves from passing steamers. In order to make sure of ample protection from rolling, the barge was fitted with heavy log outriggers on each side and a log boom was drawn around it to minimize the wave action.

Although several difficulties were encountered in obtaining a temporary power plant and doubt was expressed as to the practicability of a floating plant, it was constructed in a short time at a considerable saving over what a plant on the land would have cost and its operation has been successful.

Equipment for Muscle Shoals Project Is Ordered.—The War Department of the United States has just placed an order for four 32,500-kva. vertical water wheel generators each with direct connected exciter for the Wilson dam hydroelectric project at Muscle Shoals. This order, which includes switchboard and auxiliary equipment, was given to the General Electric Company. The four generators are each rated 32,500 kva., 26,000 kw., 100 r.p.m., 1,200 volts, three-phase, 60-cycle. The switchboard equipment will include control apparatus for eight generating units, four of which have previously been ordered by the government. Delivery is to be made in the summer of 1925.

Federal Power Commission's Regulations Printed.—The second revised issue of the Federal Power Commission's general regulations has been printed and is now available for distribution. Copies will be mailed upon application. This second revised issue embodies the text of all rules and regulations, as they have been amended, for administration of the Federal Water Power Act.

New York Company Seeks Permit for Sultan River Site

The Sound Power Company of New York, which has been interested for many years in a proposed development on the Sultan River near Everett, Wash., and which holds a preliminary permit covering the site, has filed an application for license with the Federal Power Commission. The company states that it is ready to proceed with construction. An upper project capable of developing 65,000 hp. and a lower project capable of developing 80,000 hp. are planned. The applicant expects to find an industrial market for most of its power. The power bill will be used chiefly in pulp and paper manufacture and in connection with forest product industries. The company expects to make the development so that the cost will not exceed $90 per installed horsepower.

This project is of particular interest because it is one of the few which are not being put forward as an extension of an existing public utility. Like the Priest Rapids development on the Columbia, and that of the Columbia Valley Power Company on the Deschutes, the project involves the creation of an entirely new market.

Deschutes River Project Subject of License Application

An application for license has been filed with the Federal Power Commission by the Columbia Valley Power Company to cover its important proposed development on the Deschutes River in central Oregon. The company in its application states that it is ready to proceed with the construction of the works to be erected on the Pelton site. At that site, the company plans to construct dams 125 ft. high to develop 51,000 hp. The company states that a market for all of the power which will be developed at the Pelton dam has been insured.

On completing that part of the project, the company plans to proceed immediately with its work on the Metolius dam, which is the larger part of the project. At that site, the company proposes to build an arch dam 270 ft. high and to develop 120,000 hp.

The two sites combined afford unusually cheap power. The obstacle which has prevented this development heretofore has been the question of enough market to carry the investment during the first few years. The company believes that that problem now has been solved. The engineering work on the project is to be done by Parsons, Brinkerhoff, Clapp and Douglass.

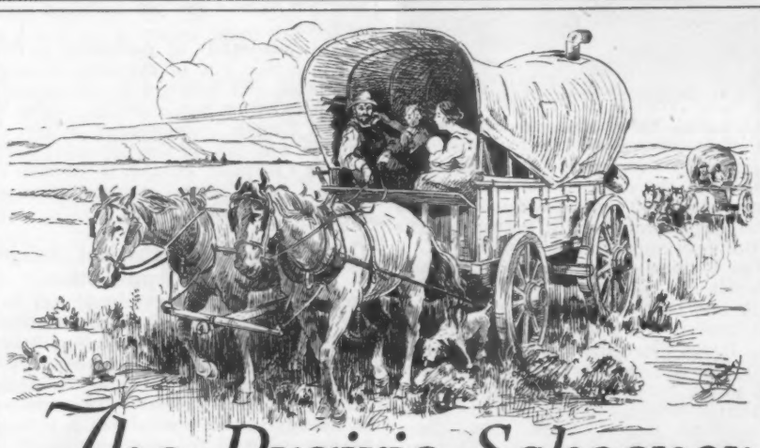
Salt Lake City Engineers Hear Talk by Seattle Editor.—Kenneth C. Kerr, editor and manager of the Railroad and Marine News, of Seattle, Wash., was the principal speaker at the April 14 luncheon of the All-Engineers' Club of Salt Lake City, Utah. R. K. Brown, chief engineer of the Salt Lake & Utah Railway, and president of the Engineering Council of Utah, presided at the luncheon, which was attended by about forty engineers of the various organizations. C. R. Higson, assistant to the chief engineer of the Utah Power & Light Company, read an interesting sketch of some of the activities of Thomas A. Edison, giving a "close-up" of some of his characteristics.

Series of Advertisements Sent Out by Cooperative Body

To further stimulate utility advertising in the Rocky Mountain region and to more vividly portray the development of utility service to the people of the region, the Rocky Mountain Committee on Public Utility Information is preparing a series of illustrated advertisements to be supplied all member companies. The first series of advertisements is on the "Old West," and is the product of George E. Lewis, executive manager of the committee.

This advertising design service will be financed as a committee activity. Mats, stereotypes, and proofs will be furnished; the utilities to place the service with the newspapers in their communities. The first advertisement in the series, entitled "The Prairie Schooner," was released for publication late in March.

New Half Million Dollar Westinghouse Plant to Be Erected in California. — The Westinghouse Electric & Manufacturing Company has awarded a contract to the Dinwiddie Construction Company of San Francisco for the construction of a second large building unit on the 12-acre plot of ground owned by the Westinghouse company in Emeryville, Calif. This new plant when completed will cost close to $500,000 and will give employment to a large number of people. The new building will provide accommodations for a large assembling shop, extensive service and repair shops, and a zone warehouse.



The Prairie Schooner

THE HAZE of time dims the *Old West.* But through it we still can picture the dust-covered Prairie Schooner, reminiscent of trackless plains, sage-brush, camp-fires and the scent of frying bacon.

Prairie Schooners traveled in caravans, the better to protect against that ever-present menace—Indians. A part of the faded picture is the old dog, panting at the heels of the travel-worn horses—the stove-pipe thrust through the roof of the canvas-covered wagon.

The Prairie Schooner was of the day of hardships, before the advent of the railroad, the telephone, the street-car—before gas superseded cord-wood and kindling, before electricity shouldered the oil lamp into obscurity.

Public Utility institutions such as ours have thrust aside the old discomforts and inconveniences. Without Utility service it would not be a far cry to the historic days of the Prairie Schooner.

The Natrona Power Company

This is No. 1 of a series of glimpses of the *Old West.*

The first advertisement of a series telling of the Old West is reproduced above. Copy is furnished by the Rocky Mountain Committee on Public Utility Information, the signature being inserted by the central station that pays for the advertisement.

Cooperative Radio Exposition Is Held by Denver Concerns

The first cooperative radio campaign and exposition to be organized in the Rocky Mountain states, was staged by Denver, Colo., radio interests April 7, 8 and 9. Owing to the success of the enterprise, it is now planned definitely to arrange another exposition in the Denver municipal auditorium in the fall. It is expected that the new $175,000 broadcasting station which is being constructed in Denver by the General Electric Company will be in operation by that time.

No estimate is obtainable of the number of radio fans in Denver that saw the display, which was provided by twenty radio distributors, dealers and manufacturers' representatives. Special display booths were built to house the equipment and a special broadcasting station studio was provided also as a further means of stimulating interest in radio activities.

The exposition was free to the public. Admission was gained by the presentation of special complimentary tickets which had been printed to boost the radio show. Special attention of the reading public was secured by a twelve-page radio supplement appearing in the Denver Post on Sunday, April 6. Official endorsement of the enterprise was given by the Electrical Cooperative League of Denver.

Following are the Denver firms that participated in the exposition: Hendrie & Bolthoff Manufacturing & Supply Company, Reynolds Radio Company, Inc., Rocky Mountain Radio Corporation, Winner Radio Corporation, Echophone Radio Shop, Scott Brothers Electric Company, Bergman-Dilley Company, Premier Electric Company, Cahn-Forster Electric Company, French Battery & Carbon Company, Mile High Photo Company, Crosley Radio Company, Maedel's Hardware Company, A. & M. Radio Manufacturing Company, W. L. Winner Radio Shop, Denver Radio Service Company, Ball Radio Company, Knight-Campbell Music Company, National Carbon Company of Long Island, N. Y., Alden Napier Manufacturing Company, Chicago, Ill., and the Crosley Radio Company of Cincinnati, Ohio.

Record for Tunnel Construction Made by Florence Lake Crews.—Construction crews at Camp 63 working on the Florence Lake Tunnel of the Big Creek project of the Southern California Edison Company drove the 15-ft. tunnel a distance of 150 ft. through solid granite during the week ended April 5. The distance covered is on an average of 21.4 ft. per day and is the world's record for tunnel construction in solid granite with 15-ft. cross-section. The record recently made surpasses the previous record made on the Big Creek project by 10 ft. and also the record of several years ago of 11 ft. per day made on the Los Angeles Aqueduct. The daily average of all camps of the Edison company during 1923 was 15 ft.

To Overhaul Yakima Valley System.—The Pacific Power & Light Company has undertaken work of overhauling all its power service lines in the Yakima Valley, near Yakima, Wash. The work includes resetting of poles after they have been creosoted and the rewiring of circuits.

Lighting Educational Committee Details at N.E.L.A. Meet

During the convention of the National Electric Light Association, to be held at Atlantic City, N. J., May 19-23, official announcement will be made of the formation of the Lighting Educational Committee. In this committee will be vested the executive control of the Better Home Lighting Activity, an undertaking in the interests of all branches of the electrical industry with its chief objective the education of the public to the importance of the proper use and distribution of electric light.

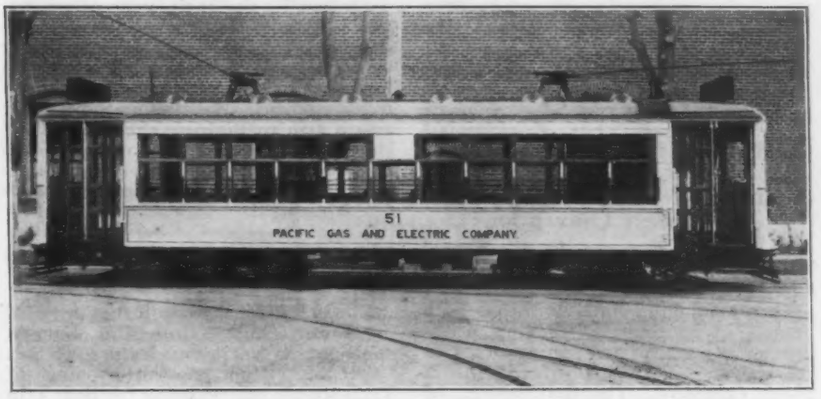
The committee is composed of glass manufacturers, fixture manufacturers, lamp companies, central stations, jobbers, contractors and dealers, represented by the chairmen of the executive committees of the different groups. The necessary financial support has been pledged and will be contributed by every branch of the electrical industry interested in lighting.

One of the features of the Better Home Lighting Activity will be a nation-wide prize essay contest, the national prize for which will be a $15,000 electric home. Full details of this contest will be explained at the convention. The Lighting Educational Committee will also direct a series of instructions that may be used as bases for study courses on the effect of poorly distributed light.

The support of eyesight conservationists, the medical profession and other groups and organizations interested in the preservation and advancement of good health, is being solicited and received. The entire activity is to be non-commercial, the movement having grown out of the desire of foremost men in the industry to give the public a better understanding of the correct principles of lighting. James E. Davidson, of Omaha, Neb., vice-president of the National Electric Light Association, has been named as chairman of the Lighting Educational Committee, and will direct the entire activity.

Portland Electric Power Company Is New Name of Utility.—Change of name from Portland Railway, Light & Power Company to Portland Electric Power Company was authorized at a recent meeting of the directors of the company. The change will become official about the first week in May. One of the principal reasons for changing the name of the company has been the change in the company's principal activity. At the time of the organization of the Portland Railway, Light & Power Company 18 years ago, the principal activity was the operation of the street railway. Since that time the light and power business has advanced considerably and it is thought that the new style is more descriptive of the company's major operations. The company will continue to operate the street car system.

Appropriation Voted to Evaluate Power Company Properties.—The Board of Supervisors of San Francisco, Calif., has voted approval of an appropriation of $10,000 to cover expenses of the city in the evaluation of the properties of the Great Western Power Company and the Pacific Gas and Electric Company with a view to acquiring them as a distribution system for power from the Hetch Hetchy project.



New type of street car recently put in service in Sacramento, Calif., by the Pacific Gas and Electric Company.

Equipment for Stave Lake Plant Ordered by B. C. Company

The British Columbia Electric Railway Company has let a contract for a generator, at $500,000, to the Canadian General Electric Company, and for a turbine, at $150,000, to the Allis-Chalmers Manufacturing Company. Smaller contracts bring the total value of the machinery up to $680,000. The machinery is for the fifth unit at the company's Stave Lake plant.

The company's own men will erect an auxiliary high-tension transmission line from the Stave Lake plant to the Horne Payne station. Three hundred tons of copper wire will be used in the line. The company is making arrangements for another substation at a cost of approximately $250,000, to prevent the overloading of transmission lines and to afford the additional capacity required in the development of Stave Lake and Alouette Lake districts.

Tacoma Electric Club Reorganized.—The Electric Club of Tacoma, Wash., has recently been reorganized, with the following officials: Charles Stewart, president; Frank Muehlenbrush, treasurer, and Carl Jebbers, secretary. The new trustees are William A. Mullins, W. J. Love and A. B. Ball. The club holds a weekly luncheon at the Olympus Hotel. Plans are under discussion for a joint picnic during the summer with the Seattle Electric Club.

Rocky Mountain League Increases Office Space.—Owing to increase in its activities and the need for larger quarters the Rocky Mountain Electrical Cooperative League has taken additional office space and now occupies rooms 808 and 809 in the McIntyre Building, Salt Lake City, Utah. C. L. Collins is the new secretary and from the above address will direct all activities of the League.

Satisfactory Progress at Utah Steel Plant.—Reports from Ironton, Utah, indicate that work on the plant of the Columbia Steel Corporation at that point is progressing satisfactorily. Several batteries of three coke ovens each are producing coke with which to operate the principal unit of the plant. When sufficient coke has been produced, the blast furnaces will be placed in operation. It is expected that this will occur about May 1.

Carload of Ranges Ordered for Medford, Ore., Region

A carload of Hotpoint-Hughes electric ranges of various models has been ordered by The California Oregon Power Company from the Edison Electric Appliance Company. The ranges will be distributed from the Medford, Ore., headquarters of the power company to the dealers in northern California and southern Oregon who are cooperating with the Copco organization in range merchandising.

The company has conducted several exceptionally productive range campaigns on its system and is preparing for active merchandising work during the spring of 1924. The company's promotional activities are of an educational nature only, the contractor-dealers making the actual sales. Through the cooperative efforts of the dealers a saturation of one range to every five consumers has been reached on many parts of the Copco system.

Snowfall and Water Conditions in the Northwest.—A summary compiled by Edward L. Wells, of Portland, Ore., weather bureau meteorologist, shows the snowfall in Oregon below normal and the outlook for less than normal flow in all streams, with an early crest of between 16 and 17 ft. and a relatively rapid fall afterwards. The snowfall in the Columbia River drainage district in Washington is reported as one of the least on record, and is below average in the upper Columbia area in British Columbia as it is also throughout Idaho. In Montana a survey would indicate strong spring floods. In the Snake River drainage basin in Wyoming it is estimated that the depth of the snow is about normal but with a water content 25 per cent less than normal so that the maximum flow will probably be less than normal.

Safety Meetings Held By Washington Companies.—At a safety rally held in the Masonic Temple in Seattle, Wash., recently, five hundred employees of the Puget Sound Power & Light Company and the Tacoma Railway & Power Company were present. The program arranged by J. E. O'Brien, safety engineer for the companies, was designed to keep fresh in the minds of the workers the standards of safety which it is the aim of the two corporations to maintain.

Meetings

Announce Tentative Program for Northwest Convention

A tentative program for the annual convention of the Northwest Electric Light and Power Association to be held at Gearhart, Ore., June 25-27, has been announced by George L. Myers, president of the association and assistant to the president of the Pacific Power & Light Company. The first session of the convention, on the morning of June 25, will be addressed by Mr. Myers who will present the president's address and by Franklin T. Griffith, president of the Portland Railway, Light & Power Company. M. H. Aylesworth, managing director of the National Electric Light Association, will speak at the afternoon meeting and "The Indeterminate Permit" is to be the topic of an address to be given by John A. Laing, vice-president and general attorney of the Puget Sound Power & Light Company. A. A. Smith, secretary and general attorney, Eastern Oregon Light & Power Company, is to use "Taxation" as the topic of an address to be presented at the same session. A paper on "Merchandise Accounting" also will be presented during the afternoon.

The morning of the second day will be devoted to an open session of the Public Relations Section with Norwood W. Brockett, chairman of the executive committee of the section, presiding. The golf tournament will be held in the afternoon and the evening will be taken up with a resumption of the session of the Public Relations Section.

Meetings of the Accounting, Commercial and Technical Sections will be held on the third day. Each section will hold separate meetings and the chairmen of the sections will preside. The evening of the third day will be devoted to the proceedings of the Executive Session, which will consist of reports of committees, amendments to the constitution and the election of officers.

San Diego Electric Club Visits Local Generating Plants

With forty young ladies, employees of the power company and representing the Women's Public Information Committee, as guests, the Electric Club of San Diego, Calif., visited the power stations of the San Diego Consolidated Gas & Electric Company following the April 22 evening meeting. The Better Power Company Cooperation Committee, with "Doc" A. E. Holloway as chairman, was in charge of this special meeting.

Following supper at the Maryland Hotel, the entire club was taken in automobiles to Station A, the pioneer central station of that city. Here they were met by the power company employees' band and then divided into groups with special guides attending each group and escorted through the plant. The visitors were shown also the shops, storerooms and offices attached to the plant.

Station B, the main generating station in San Diego, was next visited, the guests being shown the new boiler equipment, the largest oil burning boilers on the coast, and the turbo-generating equipment. Winding up the evening was a trip to the new substation C of the company, which is considered the show room of the system, architecturally and from the standpoint of modern equipment.

Talk on Grand Canyon Trip Made by Hydraulic Engineer

E. C. LaRue, hydraulic engineer of the United States Geological Survey, delivered a narrative lecture at Salt Lake City, Utah, on the evening of April 16, his subject being "A Boat Trip Through the Rapids and Canyon Gorges of the Colorado River." The talk was illustrated with moving pictures and lantern slides. This event took the place of the regular monthly meeting of the Utah Society of Engineers, and was presented to the public under the auspices of that organization.

Before a large crowd Mr. LaRue told of some of the thrilling experiences of the Birdseye party which was thought to have been lost in the Grand Canyon of the Colorado last summer while on an expedition made for the purpose of locating possible power sites.

COMING EVENTS

National Electric Light Association—
Annual Meeting—Atlantic City, N. J.
May 19-23, 1924

The Electric Power Club—
Absecon, N. J.
May 26-29, 1924

American Association of Engineers—
San Francisco, Calif.
June 11-13, 1924

Pacific Coast Electrical Supply Jobbers' Association—
Quarterly Meeting—Coronado, Calif.
June 12-14, 1924

Pacific Coast Electrical Association—
Annual Meeting—Coronado, Calif.
June 16-20, 1924

Wyoming Public Utilities Association—
Annual Convention—Casper, Wyo.
June 23-24, 1924

Northwest Electric Light and Power Association
Annual Convention—Gearhart, Ore.
June 25-27, 1924

Joint Meeting Held by Salt Lake City Utility Employees.—The Salt Lake City, Utah, employees of the Utah Power & Light Company and the Mountain States Telephone & Telegraph Company held a joint meeting on the evening of April 16. This was the date for the regular monthly meeting of the power company employees, and the telephone people were invited to occupy the main part of the program. After a program of musical entertainment by several members of the telephone organization, an exceedingly interesting and instructive demonstration of the modern telephone switchboard was given. This was followed by "First-Aid" demonstrations by four teams, each team composed of five members of the telephone company. This was the first meeting of its kind held in Salt Lake City.

"Own Your Home" Exposition in Tacoma Is Successful

The "Own Your Home" Exposition in Tacoma, Wash., April 7-13 by the Own Your Home Association, was a signal success, and plans are already being formulated to repeat the exposition again next year. At the exposition there were more than 100 exhibits of home planning and building, labor-saving devices, and a $5,000 "Dream Home" completely furnished and equipped. Entertainment features included a vaudeville program, educational exhibits and lectures.

An entrance fee of 25 cents in the afternoon and 35 cents in the evening was charged, and figures show that more than 32,000 attended the exposition during the week. The exposition advertised the fact that "You can't spend a cent after you get in," and all entertainments were without charge.

The "Dream Home," a completely equipped $5,000 bungalow, was auctioned off the last night of the show, but since the bids offered were unsatisfactory, the concerns contributing the material will purchase lots and move the building there, to be later sold.

The Blue Bird Electric Shop of Tacoma offered a Universal electric range as a wedding present to the bride to be married in the "Dream Home." Electrical exhibits throughout the show were interesting and complete.

Sacramento, Calif., Contractors and Dealers Hold Meeting

The regular meeting of the Electrical Contractors' and Dealers' Association of Sacramento, Calif., was held Thursday, April 10, 1924, at 7:45 p.m. C. V. Schneider of the Electrical Supply Company presided. F. W. Forsyth, Wholesale Electric Company, San Francisco, Calif., addressed the members on the subject of electric air and water heating. G. M. Rankin, field representative of the California Electrical Cooperative Campaign, was a guest at the meeting.

Convention Date Set by Wyoming Utility Association.—A convention date has been set by the Wyoming Public Utilities Association, according to an announcement of H. C. Chappell, secretary of the organization. It is now planned to hold the meeting June 23-24 in the new office building of the Natrona Power Company at Casper, Wyo. E. P. Bacon, general manager of that company, is president of the association. The coming convention will mark the first meeting of the organization since March, 1922.

New Radio Set Described to Portland Engineers.—The regular meeting of the Portland, Ore., branch of the American Institute of Electrical Engineers and the National Electric Light Association was held on April 9 at the University Club. The speaker was Ellery Stone of the radio department of the Pacific States Electric Company, the Coast representative of the Radio Corporation of America. Mr. Stone spoke on the principles of the latest design for a receiving set and illustrated the set with blackboard drawings. He also showed a film describing the growth and development of the radio, and had on display a new receiving set.

Manufacturer, Dealer and Jobber Activities

Edison Electric Appliance Company, Inc., Chicago, Ill., has recently placed on the market a new cooking unit known as the "C6." It is designed for use in place of one of the surface units of the new Hotpoint range and may also be applied to the Hotpoint Hughes and to certain of the old General Electric ranges. The unit is particularly adapted to such cooking operations as boiling, braising, pot-roasting, steaming, stewing, the preparation of soups and to some kinds of roasting and baking. The "C6" unit consists of a heavily insulated cylindrical compartment equipped with a special heating coil and a five-quart aluminum cooking vessel and cover. It is designed to be connected to the surface-unit cord and plug, and is thus controlled by the regular range switch. Three heats provide a rapid preheating "high"—660 watts—a boiling "medium"—110 watts—and a simmering "low"—90 watts.

Mercury Manufacturing Company, Chicago, Ill., has recently published Bulletin A-105. The leaflet is entitled "The Trackless Train" and is devoted to a description of the company's "Lif-Trans" trailer designed for transporting large reels of cable. The trailer is constructed to be used in connection with an electric tractor, as current for operating the motor of the trailer is drawn from the tractor. The trailer is designed to carry a maximum load of 10,000 lb.

Jefferson Electric Manufacturing Company, Chicago, Ill., has placed on the market a new long wave transformer for use with Heterodyne or Super Heterodyne radio receiving sets.

The Waage Electric Company, Chicago, Ill., has opened a branch office at 1622 West 16th Street, Los Angeles, Calif. This office will be in charge of Theodore Waage and will serve as the Pacific Coast branch of the firm. H. J. Gute & Company, San Francisco, will continue to represent the line in northern California.

The Holophane Glass Company, Inc., New York, N. Y., has recently issued a 12-page illustrated booklet entitled "4-Way and 2-Way Holophane Refractors for Street Lighting." This booklet describes in detail the construction application of the new asymmetric 2-way and 4-way refractors for street lighting purposes. In general, the 2-way refractor is designed to be used between blocks and the 4-way refractor at street intersections. It is claimed that the advantage of the new asymmetric refractors over the symmetric refractors is that the light is confined to the street and is not wasted on the adjacent buildings. Copies of the booklet, known as Bulletin No. 357, may be obtained upon application to the manufacturer.

Henry D. Sears, Boston, Mass., has recently prepared what is known as the Candelite poster. The poster, suitable for display purposes in dealers' stores, is devoted to a description of a new device designed to make candle type fixtures out of bracket or ceiling type fixtures.

Harvey Hubbell, Inc., Bridgeport, Conn., has recently prepared for distribution a new line of pull receptacles for metal signs, ceiling fixtures and outlet boxes. The receptacles are equipped with removable skirted rings which hold the receptacles in place and at the same time, insulate the screw shells from the metal fittings.

Crouse-Hinds Company, Syracuse, N. Y., has sent the trade Folder No. 12, which is devoted to its line of Condulets for concealing in concrete. The folder contains illustrations of typical jobs on which the material is used and describes the utility of the line. The company has also published Bulletin 2057 which contains illustrations of Vaporproof Condulets with reflectors. This bulletin also contains a price list of parts.

Harry Woodward, of the Great Western Power Company, San Francisco, Calif., captured the golf tournament cup at the Stockton meeting of the California State Association of Electrical Contractors and Dealers. Presentation ceremonies were fittingly conducted by Tom Bennett of the Rex Electric Company.

The Cutter Company, Philadelphia, Pa., has recently mailed to the trade a folder describing the I-T-E circuit breaker designed for 600 volts a.c. The folder presents an illustration of the air-break switch and information concerning the salient features of the device.

The McGill Manufacturing Company, Valparaiso, Ind., has developed a white glazed porcelain bracket for bath rooms, kitchens, hospitals, etc. The method of operating the socket portion is claimed to be distinctly different from anything thus far developed. The lever not only serves as the operating control but also as a finishing knob. The position of the socket may be reversed if desired so that the lamp is straight down. The bracket is artistically and substantially designed and harmonizes with the majority of bathroom, kitchen and hospital fixtures.

The Line Material Company, South Milwaukee, Wis., is erecting a two-story addition and rebuilding its present plant. The new building will be a modern daylight type of structure, increasing the factory space to practically 100,000 sq. ft., and doubling the present production capacity of the plant. Building operations will be completed by July 1, 1924, it is expected.

The Lionel Corporation, New York, N. Y., makers of Lionel miniature electric trains and equipment, has put on the market a new twin-motor locomotive to fit O gage track. This locomotive is the first twin-motor type ever produced for this narrow track.

The General Electric Company has recently placed on the market two new types of induction motors. The SCR single-phase motors are designed for constant speed at 60, 50 or 40 cycles, in sizes from ½ to 10 hp., and are interchangeable for 110 or 220-volt circuits. The KT-900 type is a riveted frame, polyphase induction motor, of three- and two-phase, squirrel cage, 60-cycle design, and is being sold in sizes ranging from ½ to 15 hp.

Johns-Pratt Company, of Hartford, Conn., has recently published an 8-page booklet devoted to a description of Noark underground boxes. The publication is replete with illustrations of the company's line of underground boxes.

The Estate Stove Company has recently opened a Pacific Coast office and sample room at 523 Market Street, San Francisco. The company will maintain its display in the Furniture Exchange Building.

Monitor Controller Company, Baltimore, Md., has developed the Triplock double-pole switch, which is an electrically operated, mechanically locking switch that cuts off its own operating current. The manufacturer states that there is no current in the switch coils except during the instant of closing and opening. Energizing one coil closes the switch, locks it mechanically in the closed position and automatically opens the circuit for that coil. Energizing the other coil opens the switch and automatically opens the circuit for that coil. As the switch itself opens the circuits for the operating coils as soon as the desired opening or closing movement is completed, the new switch may be used with a maintained contact form of remote control, if desired. At the present time, this switch is built only in 30-amp. size. Larger capacities will be developed later.

The Acme Electric & Manufacturing Company, Cleveland, Ohio, has brought out a new type of battery charger for radio A and B and also automobile batteries. The new charger is built in 2 and 5-amp. sizes with an attachment on both sizes to charge up to and including 36 B-type cells. The construction is such that radio A batteries can be charged while the set is in operation.

Ajax Electric Specialty Company, St. Louis, Mo., has prepared for dealers' use a new price tag of novel design. The tag carries on one side places for indicating the make of the device, the type, price and cost. On the reverse side appear four applications of Ajax plural socket plugs. This side of the tag is printed in red and black. The tag is 2¼ x 1¾ in. The company is packing five of the tags with each display carton of its plural socket plugs.

Personals

John V. Strange, assistant general manager of the Pacific Power & Light Company, with headquarters in Portland, Ore., on May 1 became operating manager of the Carolina Power & Light Company, Raleigh, N. C. The Eastern company, like the Pacific Coast company, is a Bond and Share property,

JOHN V. STRANGE

therefore Mr. Strange remains in the same general organization. Mr. Strange has spent the last thirteen years with the Pacific Power & Light Company, the last five years as assistant general manager. Starting in 1911 in the stores department at Kennewick, Wash., he was stationed, successively, as local manager at Prosser, Wash., Hood River, Ore., and Pasco-Kennewick, Wash. At Raleigh he will be employed in work similar to that at Portland. Mr. Strange is possibly best known through his work in the commercial sections of the National Electric Light Association and Northwest Electric Light and Power Association, in which he has frequently held assignments.

J. W. Carey has been appointed chief engineer of the Washington State Department of Public Works, succeeding Herbert J. Flagg, resigned.

Louis C. LaMont, office manager of the Westinghouse Electric & Manufacturing Company, Los Angeles, Calif., has recently gone to Pittsburgh, Pa., and other Eastern points where factories of that organization are located.

G. M. Rankin, field representative of the California Electrical Cooperative Campaign, recently spent several days in the Sacramento Valley. He attended the meetings of the Sacramento Valley Electrical Society and the local Electrical Contractors' and Dealers' Association.

H. J. Miller has recently joined the Los Angeles, Calif., office of the General Electric Company as specialist in fractional horsepower motor sales. He takes the place of **R. E. Boyle,** who was transferred to the Cleveland, Ohio, office of that company as manager of the fractional horsepower sales division in that district.

H. W. Young, president of the Delta-Star Electric Company, Chicago, Ill., is making an extended trip to California and other Pacific Coast states.

W. F. Clark, general manager of the Automatic Electric Water Company, Warren, Pa., has recently left San Francisco, Calif., where he has been on business for his company.

Herbert A. Cram, California manager of the electrical department of Landers, Frary & Clark, with headquarters in San Francisco, was a recent Los Angeles visitor.

S. B. Gregory of the Arrow Electric Company of San Francisco, Calif., was a recent visitor to Los Angeles.

S. Rosenfield, of the United Electric Supply Company, Salt Lake City, Utah, is in Denver, Colo., on business for his company.

F. M. Cockrell, formerly promotion manager of McGraw-Hill Company, Inc., and more recently manager of the industrial department of Campbell-Ewald Company, has joined the staff of The Society for Electrical Development. He will supervise the program for the development of more adequate wiring.

Burton Y. Gibson, Pacific Coast manager for the Walker & Pratt Manufacturing Company, Boston, Mass., has just returned from an extended trip to the Northwest. Mr. Gibson spent two and one-half months in sales work in that territory and reports favorable business conditions.

N. B. Acers, factory representative in Denver, Colo., of the Delco Light Company, Dayton, Ohio, is on a trip to the factory to attend the annual sales convention of the company.

W. H. Rademacher, special representative of the Edison Lamp Works of the General Electric Company, Harrison, N. J., was a recent Los Angeles, Calif., visitor. Mr. Rademacher is making a tour of the Pacific Coast in the interest of his company and while in Los Angeles delivered a lecture on the subject of "Modern Illumination, Its Merchandising and Application."

Robert Moffit, formerly with The Washington Water Power Company, engineering department, has been appointed by the Associated Engineers to represent that association at the world power conference in London, England, this summer.

T. L. Nightingale, electrical contractor of Sacramento, Calif., was recently in San Francisco on business.

E. Birkel, formerly of Birkel & Merrigold, fixture manufacturers and dealers, Los Angeles, Calif., and **George E. LeGassick,** formerly sales manager for Meyers Electric Company, Los Angeles, have opened a wholesale electric supply house at 702 Santa Monica Boulevard, Los Angeles, where they have stocked a complete line of electrical supplies for the contractor and dealer.

H. D. Randall, district manager of the General Electric Company, Denver, Colo., and **A. C. Cornell,** district manager of the Western Electric Company, Denver, were visitors in Salt Lake City, Utah, early in the month in connection with business of branch offices in that city.

Walter T. Wells has resigned his position as general sales manager of the King Manufacturing Co., Chicago, Ill., to return to his family in Denver, Colo., where he is engaged in developing some private undertakings not affiliated with the electrical industry.

G. A. Swain, assistant to the manager of the supply sales department, Westinghouse Electric & Manufacturing Company, has been elected chairman of a new section of the Electric Power Club. This section, which includes instruments and instrument transformers, was recently organized. Mr. Swain, who is chairman of the Instruments and Measurements Committee of the American Institute of Electrical Engineers, has also been appointed chairman of the Institute's section for revising the Institute's standardization rules pertaining to instrument transformers.

Carl L. Wernicke, since 1907 manager of the Portland, Ore., office of the Westinghouse Electric & Manufacturing Company, has undertaken the work of special representative of that company. As such he will be relieved of his former detailed office duties and will devote the larger part of his time to the central station business of the company.

F. H. Woodward, general sales manager of the Great Western Power Company of California, San Francisco, Calif., was recently in Sacramento on business. He was one of the speakers at the meeting of the Sacramento Valley Electrical Society.

E. M. Herr, president of the Westinghouse Electric & Manufacturing Company, with Mrs. Herr, recently spent four days in Seattle, Wash.

R. G. Chamberlain, district sales manager of The Hurley Machine Company, Seattle, Wash., is in Spokane in connection with sales matters.

Ray W. Turnbull, assistant Pacific Coast sales manager of the Edison Electric Appliance Company, Portland, Ore., was in Spokane, Wash., recently.

V. R. Hughes, of the Pacific Gas and Electric Company, was elected a member of the executive committee of the Society of Safety Engineers of California at the recent annual meeting.

John Hood, who was for several years engineer of the San Francisco, Calif., office of the General Electric Company and for the past three years has been assistant manager of Catton-Neill &

JOHN HOOD

Company, Limited, an engineering and manufacturing firm of Honolulu, T. H., which acted as Hawaiian representative of the General Electric Company, has been appointed manager of the Oakland, Calif., Works of the General Electric Company. Mr. Hood took up his new duties March 1.

Ross B. McElroy has been appointed assistant sales manager of The Washington Water Power Company, Spokane, Wash. Born in Spokane Sept. 1, 1890, Mr. McElroy graduated in electrical engineering from the Washington State College, Pullman, Wash., with the class of 1913 and on graduation entered the service of The Washington Water Power Company in the commercial department. During the first few years he gave his attention to residential lighting and especially the proper wiring of new homes. Later he worked into the general commercial work in the business district, handling general lighting and store accounts, and in July, 1922, he was given charge of the Electric Shop. Mr. McElroy is active in civic affairs, being a member of the University Club, Chamber of Commerce, Spokane Advertising Club and Electric Service League. As chairman of the Electrical Home Committee of the Service League in July, 1922, he was largely responsible for the success achieved.

ROSS B. McELROY

F. W. Forsyth, of the Wholesale Electrical Company, San Francisco, Calif., recently spent several days in Sacramento on business. While there he addressed the local Electrical Contractors' and Dealers' Association, and also attended the meeting of the Sacramento Valley Electrical Society.

B. C. Holst, representing W. N. Mathews Corporation, has moved his offices from the Furniture Exchange Building, San Francisco, Calif., to Rialto Building, that city.

W. J. Dennis has been appointed assistant to **L. T. Merwin,** general manager of the Northwestern Electric Company, with offices in Portland. Mr. Dennis was formerly the head of the sales department and his successor has not yet been named. He has been active in his company for the past ten years and for a like period before that time he was superintendent of the plant of the Ames-Harris-Neville Company. He came to Portland from Texas.

F. S. Mills, of the San Francisco, Calif., office of National X-Ray Reflector Company, was a recent visitor to Salt Lake City. While there he gave an address before the luncheon of the Lighting Bureau.

A. A. Tufford, for over seven years with various offices of the Northern Electric Company, in Canada, has joined the staff of the H. B. Squires Company, San Francisco, Calif.

J. C. Ralston, of Spokane, Wash., has been elected chairman of the Committee on Reforestation and Timber Supply of the American Engineering Council. **C. C. Thomas** of Los Angeles, Calif., is also a member of the committee.

A. T. Fish, sales manager, and **Luther G. Poe** of the A. J. Lindermann & Hoverson Company, Milwaukee, Wis., are making an extensive tour of the Pacific Coast. They have already been to the major cities of the Northwest and will visit southern California before returning to the factory.

Fred Todt, San Francisco, Calif., district manager of the Pacific States Electric Company, is on an extended trip to Eastern cities.

H. E. Sandoval, manager of electric sales, Pacific Gas and Electric Company, San Francisco, Calif., recently made a business trip to Sacramento.

W. H. Hodges, advertising and publicity man of the H. M. Byllesby public utility properties throughout the West, is now on a trip of inspection. The Mountain States Power Company is one of the big properties owned by the corporation.

W. B. Wallis, president of the Pittsburgh Electric Furnace Corporation, Pittsburgh, Pa., is visiting Pacific Coast cities in the interest of his firm. Mr. Wallis has already spent some time in Los Angeles and San Francisco, Calif., and will investigate conditions in the Northwest.

Mortimer Fleishhacker, San Francisco, Calif., banker and one of the principal owners of the Northwestern Electric Company, Portland, Ore., was a recent visitor in that city. Mr. Fleishhacker expressed himself as well pleased with the financial condition of the company which will spend about one million dollars this year in system betterments.

I. W. Frank, director of the Copperweld Steel Company, Ruskin, Pa., is visiting Pacific Coast cities in the interests of his company. Mr. Frank has already spent some time in San Francisco, Calif., and is now in Los Angeles.

Jack Hawkins, western sales supervisor of the Apex Electric Distributing Company, with headquarters in Kansas City, Mo., is visiting Denver, Colo., and other points in the western section of his territory.

Harry B. Joyce, assistant general manager of the Ideal Electric and Manufacturing Company, Mansfield, Ohio, manufacturers of synchronous motors and generators, was recently in Los Angeles, Calif., on business conferring with his representative, **Lombard J. Smith.**

S. C. Powell, manager of the Republic Creosoting Company of Seattle, Wash., was recently in Los Angeles, Calif., on business for his company.

D. H. McCulloch of the Electric Service Company, Sacramento, Calif., was a recent visitor to San Jose in connection with business.

M. Givens, formerly in the electrical contracting business in Plainfield, N. J., has established a contractor-dealer business in his new building at 1305 East Colorado Boulevard, Glendale, Calif.

M. C. Osborn, in charge of electric range promotion for Landers, Frary & Clark and formerly prominent in utility circles in the Northwest, visited his old home in Denver, Colo., in March while on a business trip in the mountain region.

Francis L. Landon, industrial sales engineer of the Pacific Gas and Electric Company, was recently transferred from the Sacramento, Calif., office to San Francisco. He has served in the construction department, meter department of the San Jose division, and in the illumination sales and industrial sales departments of the Sacramento division. In his new position he will have increased responsibilities doing creative work.

C. C. Hillis, president and general manager of the Electric Appliance Company, San Francisco, Calif., has just returned from an extensive trip to eastern factories. Mr. Hillis visited Providence, R. I., New Britain, Conn., and other industrial centers.

O. F. Lackey, vice-president of the Colorado Springs Light, Heat & Power Company, has returned to Colorado Springs, Colo., after a prolonged trip to his old home, Baltimore, Md.

Chester Lichtenberg of the engineering department of the General Electric Company, Schenectady, N. Y., was in Spokane, Wash., April 17, and gave a talk before the engineering department of The Washington Water Power Company on the subject of "Automatic Operation of Power Stations and Substations," and on the use of telegraph systems for system load dispatching. Mr. Lichtenberg will visit the other important Coast cities on his trip.

Obituary

H. T. Van Riper, sales manager of the Chicago district of the Edison Electric Appliance Company, Inc., died April 3. He was forty-five years of age. Mr. Van Riper, who was the first Hotpoint salesman, in the beginning traveled over the United States and Canada, as well as Mexico, securing new accounts and establishing connections for Hotpoint appliances. He later took up the intensive development of Oregon and Washington for the Hotpoint company, which in time was merged into the Edison Electric Appliance Company. In 1922 he was appointed district sales manager of the St. Louis, Mo., district, covering seven states; and in 1923 was made sales manager of the Chicago, Ill., district.

H. T. VAN RIPER

Trade Outlook

San Francisco

The spread of the hoof and mouth disease among cattle in the country districts is having an inevitable effect upon business conditions in San Francisco. Jobbers report sales in these districts retarded, and the necessarily strict quarantine measures imposed on shipments from infected areas have resulted naturally in a certain amount of indirect loss to business in general.

Trade, wholesale and retail, is in fair condition, although wholesale hardware men report business as behind that of last year. Activity is reported in manufacturing and industrial lines. Building operations continue in good volume, and the demand for construction materials is holding up well. There is considerable activity in home building in the outlying residential districts which should react favorably on the electrical fixture and appliance trade.

Building permits for the first quarter of 1924 amounted to 2,561 with a valuation of approximately $11,743,512. This is an increase of about 3.4 per cent over the corresponding period in 1923 when 2,477 permits were issued valued at about $9,714,059.

Statistics compiled by the Chamber of Commerce show 1,315 new commercial, industrial and other enterprises for the months of January, February and March of this year.

Collections are stated as fair to good.

Portland

A feeling of uneasiness is general in the lumber business. Most mills have either reduced the number of shifts or are running part time. There are numerous threats of price weakening in lumber, but no marked reductions are reported. Many men have been thrown out of employment.

At the same time building construction in Portland has gone ahead in large volume. Residences and small business blocks are in good demand and lots continue to move well. Material men expect the largest year's business in the history of the city.

There is some foundation for the statement that capital is being held out awaiting reductions in lumber and material. Offsetting this argument is a recent wage award to the electrical workers of both the local power companies granting a substantial increase in pay.

There has been some falling off in trans-Pacific shipping, resulting in withdrawal by the Shipping Board of six vessels from this port.

Los Angeles

The sale of electrical retail products was good during the first two weeks of April and showed improvement over the latter part of the month of March. This is true of radio sets and supplies as well as of electrical appliances. Manufacturers report good business prevailing both in supply and industrial lines. However, the sale of wholesale electrical supplies by jobbers has not been up to that of other branches of the industry. This, in a measure, is attributed to the slump in building activities, which though somewhat larger than last year's, are not keeping pace with the growth that was expected. It has also been due to the hoof and mouth epidemic which has caused a number of plants and factories to close down. This in turn has caused an oversupply of labor and a gradual slowing up of business.

Building permits for the first two weeks in April amounted to 2,460 with a valuation of $7,917,983, as compared to the corresponding period in 1923 when 2,444 permits were issued with a valuation of $7,451,432. This represents an increase of only about 6 per cent. Bank clearings for the same period amounted to $300,028,461.70, which shows an increase of about 13 per cent over the corresponding two weeks of April, 1923, when they amounted to $264,417,471.18.

Denver

General conditions remain uniformly good except for seasonable curtailment of outdoor activities due to changing weather. Iron and steel plants, foundries, and machine shops are operating steadily with increased activity assured from industrial demands.

Prospects for another good agricultural season are excellent, with winter wheat in fine shape due to favorable moisture conditions. Excessive rainfall has somewhat retarded spring plowing and farming operations. As a further consequence, farm labor demand is not up to the supply, a condition largely due to the influx of unskilled labor from other portions of the country, especially the West Coast.

Bank deposits have decreased, due to heavy disbursements in the form of dividends and interest and the usual seasonal withdrawals by country banks, which are just commencing to finance farmers. Financial conditions are improving in the southern portion of the mountain region.

The electrical industry is doing a satisfactory volume of business, superior to most lines, due to the continued building operations, central station improvements and extensions, and industrial demands. Summer business fully as good as last year is anticipated.

Seattle

The Seattle electrical industry reports a good volume of business done during the first quarter of 1924, but shows a decline of between 10 and 15 per cent in that volume as compared with the aggregate for the first three months of 1923. What might appear to be a slump is explained by the fact that the volume of business moving in the first quarter of last year was unusually large.

Supply materials are furnishing the greatest movement in the present trade. Installations of new equipment are less frequent than last year, but the replacement volume is good. With a slackening in the lumber industry in the Northwest, a slowing down in the electrical trade was perceptible. Prices are fairly well stabilized, and no appreciable changes are expected.

The lumber industry is in an unsatisfactory condition at present, with many of the mills closed and few operating two shifts. Drastic reduction in log prices is reported.

Building construction continues heavy, this condition existing in practically all the Puget Sound cities. Residence building is particularly active, and demand for the higher grade electrical fixtures and household equipment is showing a steady increase.

Salt Lake City

The first of the final steps in making iron out of Utah ore and coal was taken on April 14 when the byproduct coke ovens at the Ironton plant of the Columbia Steel Corporation were given the primary charge of coal. It is expected that blast furnaces will be blown in some time before May 1. The development of this iron and steel industry is looked upon as being of immense importance as a factor in the industrial activity of this section.

According to the monthly crop survey prospects are exceedingly good for winter wheat, which adds to the encouragement of the farmers for a prosperous season.

General demand for farm and mine labor, mining activity, and plans for increased industrial expansion are highlights in the outlook for business conditions in the intermountain territory.

Electrical jobbers continue to show an increased volume of business. As the irrigation season approaches and new projects get under way, there is anticipated an increased demand for electrical pumping equipment.

Collections continue to improve, as shown by comparative figures both for the same period last year and for the earlier months of this year.

Spokane

With the arrival of spring a general quickening of business activity is noted. Building permits continue to gain and many houses and other important jobs are under construction. The Eagles have announced the construction of a new lodge building costing $500,000.

An electric range campaign being conducted by The Washington Water Power Company shows weekly totals running above those reported in a similar campaign a year ago. Retailers are reporting good demand for spring goods.

The lumber business is characterized by some uncertainty, with a marked falling off in price for sash and frame. Considerable attention is being given to the utilization of short length and waste stock, of which a large amount is produced, and extensive markets are being opened up.

Mining activities in the Coeur d'Alene district of Idaho, in Northeastern Washington, and British Columbia continue brisk. A number of new mills and concentrating plants have been reported.